TEXTILE BULLETIN

Vol. 58 August 1, 1940 No. 11

Card Clothing Lasts Longer When Oil is Kept Off!

TRADE MARK REGISTERED

NON-FLUID OIL

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

Insures that result!

Does not drip out of comb-boxes onto card clothing and stock. Reduces lubricant cost by outlasting oil 3 to 5 times.

Let us show you how your mill can make these savings. Write for free testing sample!

NEW YORK & NEW JERSEY LUBRICANT CO.

292 MADISON AVENUE NEW YORK

Works: NEWARK, N. J.

Southern District Manager: FALLS L. THOMASON, Charlotte, N. C.

WAREHOUSES:
Charlotte, N. C. Greenville, S. C. Atlanta, Ga.
Providence, R. I. Detroit, Mich. Chicago, Ill. St. Louis, Mo.

At last

A TRULY **LINT-PROOF** LOOSE BOSS TOP ROLL FOR SPINNING AND ROVING FRAMES

An original type of shell roll that is superior to anything heretofore available for textile machines.

The arbor is formed from a single piece of hardened steel designed to give equal weight distribution, with ball races correctly spaced for best load-carrying qualities.

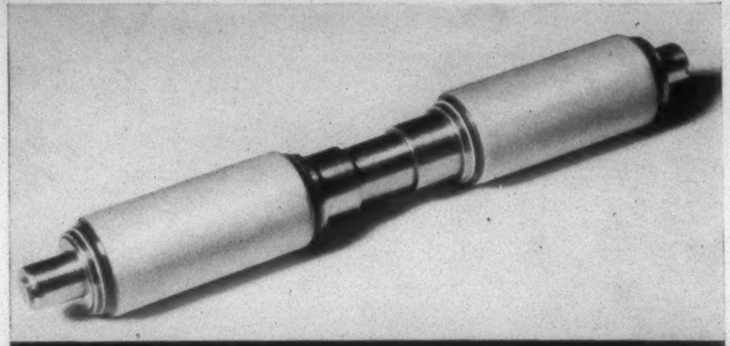
Shells are securely locked in position during operation, but are easily removed for buffing or covering.

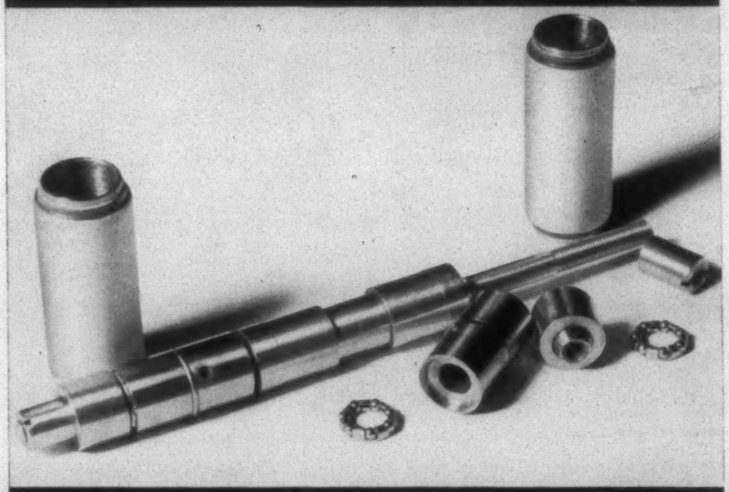
Long life lubrication eliminates daily oiling nuisance.

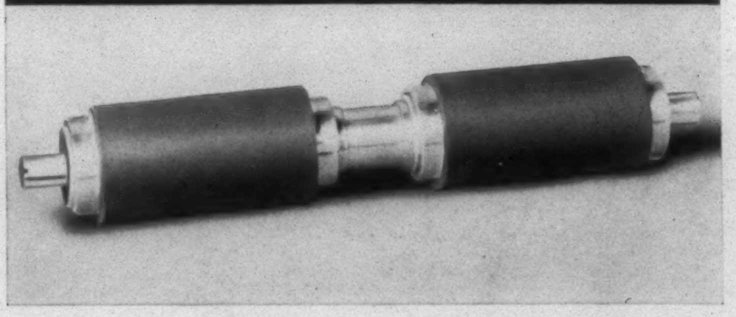
No grease or oil stains on your yarns.

The entire assembly is effectively sealed against lint and dirt.

Specify the NEW Whitin Ball Bearing Shell Top Roll on all new Spinning and Roving Frames, or when replacing your present equipment.







WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. ATLANTA, GA.

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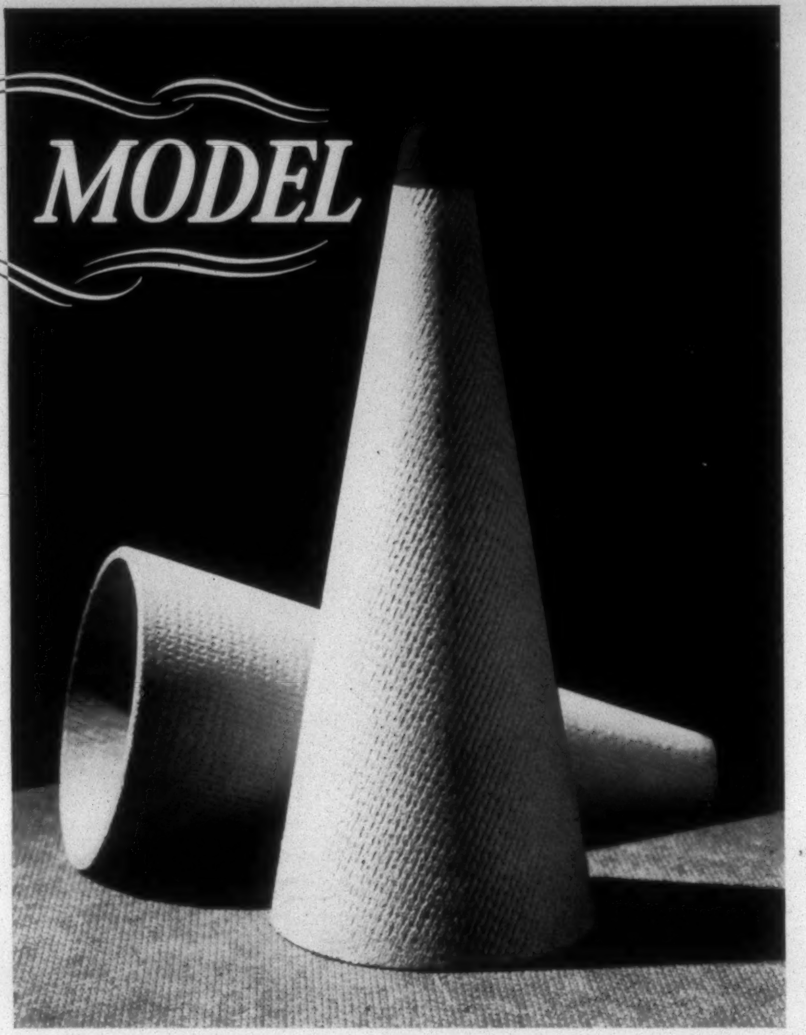
1941 MODEL



Improvements at frequent intervals take the place of new models in SONOCO Textile Paper Carriers. These improvements are designed to increase efficiency and lower costs. Thus the Velvet Surface Nutaper Cone of a year ago is outmoded by an improved Nutaper. It works on the same winding equipment, it does the same job in packaging yarn—but it does it better, more efficiently, and therefore cheaper. In the next year, or two, a new and still better Nutaper Cone will be developed and it will be a Sonoco product.

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Published Semi-Monthly by Clark Publishing Company, 218 West Morehead Street, Charlotte, N. C. Subscription $1.50 per year in advance. Entered as second-class mail matter March 2, 1911, at Postoffice, Charlotte, N. C., under Act of Congress, March 2, 1897.

TEXTILE BULLETIN

MEMBER AUDIT BUREAU OF CIRCULATIONS

Vol. 58 August 1, 1940 No. 11

The World Cotton Situation*

By W. L. Clayton

Anderson, Clayton & Co.

THROUGHOUT the world, catastrophic events have taken possession of men's minds. The awful drama of total war, snuffing out empires and human life and human liberty on a brutal and colossal scale, dominates the daily thoughts and lives of people everywhere. With a kind of fascinated horror, they read and listen and wonder. It seems petty to talk about the world cotton situation when the world itself has exploded and is on fire. It is more appropriate to talk about the world revolution, its meaning to the United States, and, incidentally, its effect on cotton.

Please, therefore, do not be surprised if I exercise generously the license usually permitted a speaker.

Anything which must be discussed in terms of world trade is obviously just now in an extremely difficult, even almost tragic, position. The naked truth is that world trade, in any normal sense, lies prostrate. Cotton, as the fibre from which about three-fourths of the world's clothing is made, is peculiarly an article of international trade. In consequence, the cotton producer and every part of the great raw cotton industry, wherever located, faces a dark and uncertain future.

The situation must, nevertheless, be studied in terms of today and tomorrow. Yesterday's experiences, with its successes, its failures, and its mistakes, almost certainly holds no lamp for tomorrow's guidance.

The present situation, briefly, is this:

For the past five years the international trade in raw cotton of all growths has averaged about twelve and one-half million bales annually. Of this volume, the United States has furnished a little over five million bales. Today, the war has effectively eliminated as importers of cotton practically the entire Continent of Europe, consuming about five million bales annually of all growths of cotton.

Those countries to which exports are still possible, such as Great Britain, Japan, China, etc., have in recent years taken an average of seven and one-half millions of bales of all kinds of cotton, of which the United States has furnished three million bales. It is extremely doubtful if, with a continuation of the war, these countries will buy more than two to two and one-half million bales of our cotton. As you know, the exports of United States cotton normally averaged nearly eight million bales, and for the past five years the average has been something over five million bales.

Thus, for cotton as well as for other agricultural commodities, we are rapidly approaching a realization of that catch slogan of the isolationists—"The American market for the American farmer." What the isolationists have not understood or at any rate what they have not made clear is that this really means—"*Only* the American market for the American farmer."

On that basis, of course, we have in the United States a surplus of at least two million farm families and seventy-five to one hundred million acres of farm land. . . .

Now, turning from war to peace, such as it will be, let me give you a picture, as I see it, of the world trade situation if the dictators win this war, or even if it ends in a kind of stalemate.

Here it is:

A bankrupt totalitarian Europe, returning to peacetime industrial production at starvation wages and long hours, requiring vast quanttities of foodstuffs, fibres and other raw materials;

Latin America, Africa, and Asia, warehouses bulging with raw materials, the sale of which was interrupted by war, requiring manufactured goods of all kinds;

The United States, with practically all the gold in the world, a huge industrial plant, working at high wages and short hours, large stocks of cotton, wheat, and corn, and other raw materials, and a high protective tariff.

This picture may be over-simplified, but it certainly suggests that South America, Africa, and Asia will swap their raw materials to Europe for cheap manufactured goods, and that the United States will be left holding its surpluses both of agricultural and industrial products.

This has for us both economic and political implications. Not only are there strong ties of race, culture, and language between South America and the old world, but the economy of the two areas is much more complementary than that of the United States and South America. Europe needs all South American products; we need only

(*Continued on Page 36*)

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*Excerpts from address delivered at recent Cotton Research Congress, at Waco, Tex.

Erecting, Overhauling and Fixing Looms

By Frank D. Herring

Following is the third chapter of a series of articles on loom fixing and loom maintenance by a practical mill man. Accompanied by illustrations of all portions of a loom, this series will go into minute detail explaining the various motions and their settings, timings, repairs, etc.

Part 3

Positioning the Lay

BEFORE the hopper, or battery stand, the frogs, and protector rods can be set correctly the lay must be put in the proper running position.

Every mill should have a set of gauges, furnished by the loom builders, for the correct positioning of the lay, battery stand and other parts, but as we are sometimes called upon to do this work without the gauges, we must know the proper procedure in order to obtain satisfactory results.

First, make sure that the parallels are in place, contacting the rocker shaft bearings on both ends of loom, and securely tightened. Then pull the lay to position where the protector rod daggers will rest on the frog pieces, or frog steels. Then loosen the lay guide head and the swords and position the lay so as to have both of the protector rod daggers equally divided on both of the frog steels. Then tighten the swords and the lay guide and lay guide head securely. This will position the lay lengthwise, but it is also necessary to permanently fix the position of lay on its forward movement. To do this pull the lay to extreme front center position and adjust the eccentric pins in the swords and crank arms to a point where there will be 3/16 of an inch clearance between the tip ends of the protector rod daggers and the front uprights, or posts on the loom sides. Allowance should be made in case of excessive wear on the ends of the protector rod daggers. A more accurate way to position the extreme forward movement of the lay is to gauge the transfer hammer with the inner back wall of the shuttle, with the shuttle in battery end and the transfer hammer at its extreme depth on the transfer there should be 1/8 to 3/16 inch clearance between the hammer and inner back wall of the shuttle, then make a gauge and position the opposite end of the lay the same, or on exact parallel line with the take-up roll. This is an absolute accurate way of positioning the lay provided the battery stand is in the proper position, or in the position the loom builders put it. But sometimes it becomes necessary to replace the battery stand, or the breast beam and the replacement part will not have the holes drilled for the dowel pins, consequently it becomes necessary to resort to the first mentioned plan of positioning the lay.

Adjusting and Packing the Frogs

The frogs should be packed and put in the proper place after the lay has been positioned, but never before this is done.

It is best to first remove the live frog, and then turn the lay forward until the protector rod dagger is tight against the steel piece in the dead frog. With the lay in this position there should be 3/4 inch clearance between the fel of the cloth and the front outer wall of the shuttle with the shuttle laying, flat in running position, against the reed.

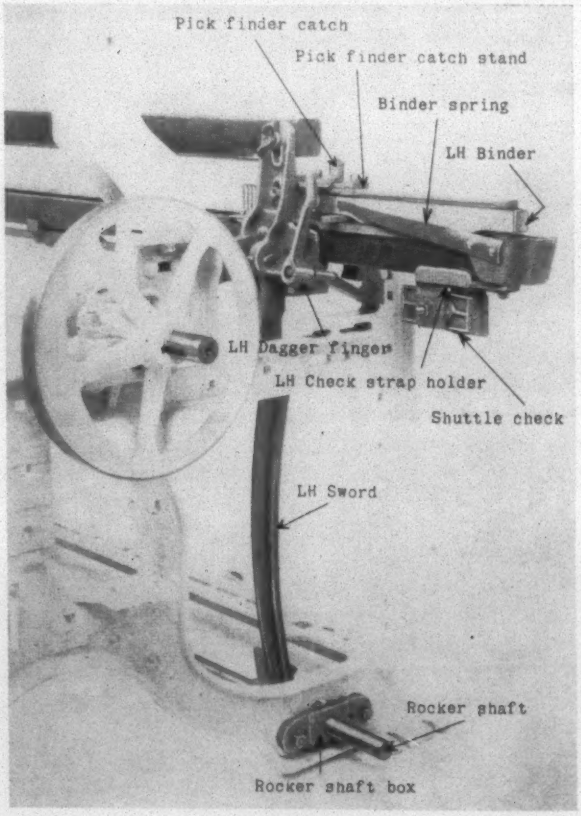


Figure 2

Where there is no warp on the loom this setting can be made by turning the lay to extreme front center position and then turning it back toward bottom center, 3/4 of an inch plus the diameter of the shuttle. The lay should be stopped at this distance back from the fell of the cloth whenever the loom slams off. To obtain this setting it is necessary to regulate the packing in the frog. After this is done on the dead frog put the frog stop in place behind the dead frog and tighten it securely, allowing no back and forward movement of the dead frog. After this is done regulate the packing in the live frog to obtain the same setting on it as on the dead frog. In other words, both frogs should be tight when the protector rod daggers are in contact with them and the lay ¾ inch plus the diameter of the shuttle back from the fel of the cloth.

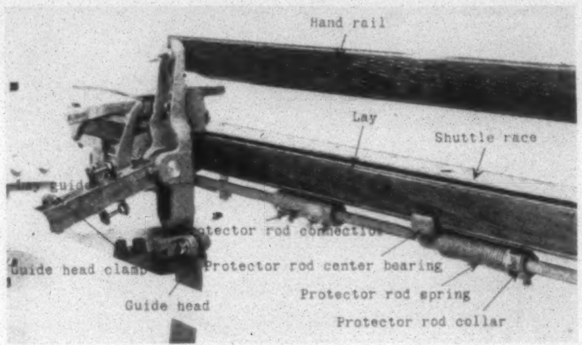


Figure 3

When both frogs have been properly packed, and the above position of the lay is obtained, pull the shipper handle on in running position, with the shipper mechanism disconnected and loom not running. Adjust the frog stop behind the live frog to stop the live frog after it has been forced back ½ inch by the frog lip and the shipper handle. Then be sure to tighten the frog lip and the frog stop securely.

Comments

The proper packing and positioning of the frogs is of vital importance. If the frogs are not sufficiently packed the lay will be allowed to come too far forward before being stopped by the protector rod daggers and frog steels and thereby cause a break out of the warp yarn, or shuttle smash, whenever the shuttle is trapped in the warp or between the sheps, when slamming off of the loom takes place.

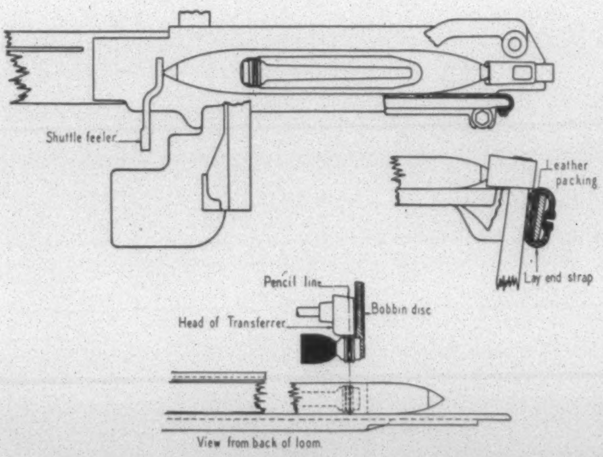


Figure 4

But special care should be taken to avoid packing the frogs too much, as this would force the frogs back too far and the protector rod daggers would not have sufficient radius to work in and would consequently contact the frog steels too quickly and cause unnecessary slamming off of the looms.

It is a wise policy to put a piece of leather in the frog on top of the frog rubber, after the rubber has been put in place, as this will greatly prolong the usable life of the rubber. However, it is sometimes necessary to cut away a small portion of the rubber to compensate for the additional packing of leather, to prevent the frog from being forced back too far. This piece of leather should be cut small enough to avoid the possibility of it becoming wedged in the frog.

Setting the Protector Rods and Protector Rod Fingers

First, remove all excessive lost motion from the rocker shaft and tighten the swords securely. Also remove all lost motion from the crank arms. Loosen the protector rod connection and the protector spring collar. Then tighten both protector rod bearings and make sure that the protector rod is free of any binding whatsoever, then adjust the protector rod spring to the desired tension and tighten the spring collar. Place a washer, about 1/16 of an inch thick, under the protector rod dagger on the battery end and put the protector rod connection in place and tighten it securely. While tightening the protector rod connection the dagger on the battery end can be held down against the washer with one hand, the protector rod spring will hold the dagger on the shipper end in place. Before tightening the protector rod connection make sure that there is no lost motion lengthwise in the rods.

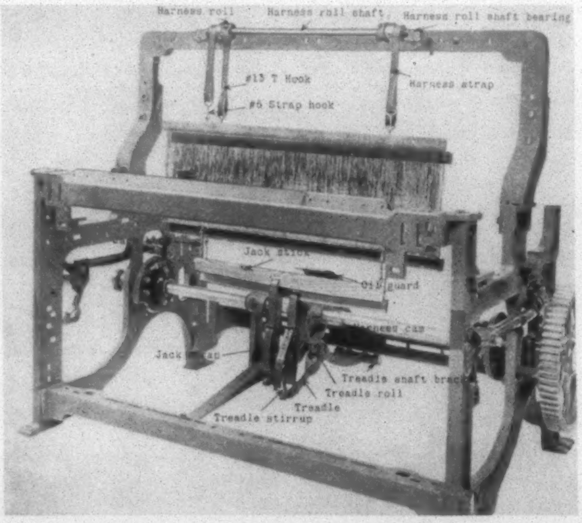


Figure 5

The protector rod fingers should be removed before setting the protector rods. After setting the protector rods inspect the binders carefully, and if not in good condition, they should be removed and repaired, or replaced with new ones. Be sure that the leather pieces on binders, where the protector rod fingers contact, are in good condition. Then put the protector rod fingers in place and adjust them to a point where the protector rod dagger on the live frog will be raised 1/16 of an inch clear of the frog. This setting should raise the dagger to clear the dead frog ⅛ of an inch.

The protector rods and frogs are very important parts of the loom, and special care should be taken in setting them. They are very costly parts and the proper setting and care of them will not only give insured protection, but will greatly prolong the usable life of them. It is a very wise policy to use two protector rod center bearings and two protector rod springs on all looms, and especially on broad looms. By using two springs you will naturally use less tension on each spring, thereby greatly prolonging the life of the springs and the parts attached thereto, and of course this prevents loom stoppage for repairs. The use of two springs gives double protection against shuttle smashes or shuttle breakouts. In fact, it will just about eliminate entirely this dreadfully despised and very expensive trouble. Also, the use of two center bearings and two springs, placed at equal distances from each end, will give much smoother and steadier operation of the entire protector rod, thereby eliminating excessive wear on the protector rod and other parts attached thereto. It will also lessen the warping and springing of the protector rod and give a smoother, steadier lift to the protector rod daggers, preventing the daggers from touching or tipping the frog steels and becoming broken or chipped off. A reasonably tight protector rod spring is preferable, also a tight binder spring. This will enable one to box and hold the shuttle in the box without the use of a wedge tension gotten by running a tight shuttle box. The spring tension will give a smoother, lighter pick, thereby eliminating the sudden jar or jerk throughout the entire loom. A smooth, easy pick will give a straighter throw of the shuttle, and this is very desirable for numerous reasons. The spring tension will carry through much better under any and all conditions, and one will have much less trouble with the shuttle boxing improperly, bouncing or not going up properly, due to weather changes and changing humidity conditions. Shuttles boxing properly eliminates numerous loom stops and the consequent loss in production and quality, and additional costs and work to all parties involved.

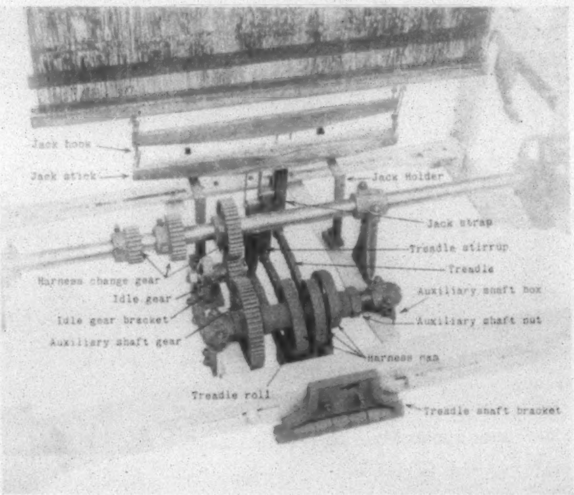


Figure 6

Shown in Figure 2 is the lay guide assembly, and parts of the protector rod. Shown in Figure 3 are parts of the protector rod and other parts of the lay assembly. The protector rod center bearings should be secured to the lay by drilling a hole through the lay and inserting a 5/16 stove bolt instead of using the wood screws usually provided for this purpose.

Positioning the Battery or Hopper Stand

All looms sent out by the loom builders have the battery stands gauged and properly set and secured in place with dowel pins, but it sometimes becomes necessary for the loom fixer to replace a broken battery stand or breast beam, and in this event new holes have to be drilled for the dowel pins. This being vitally important work, it should by all means be done correctly. First, make sure that the breast beam is securely tightened. Take all excessive lost motion out of the rocker shaft and crank arms. Make sure that the rocker shaft bearings are pinned and securely tightened. Put the shuttle in the battery end of loom, with the transfer mechanism indicating a transfer or change of the bobbin. Put a new picker on the battery end and make sure that the lay end strap, shown in Figure 4, is in good condition. Put the battery stand in approximate place on the loom and tighten the bolts sufficiently to hold it in place. Apply the bobbin support. Turn the lay to extreme front center position and adjust the battery stand by filing it or shimming under it as need might be to a point where the lowest part of the battery stand will clear the box plate 1/16 of an inch. Apply the transfer hammer an all other battery parts. Put an empty bobbin in the battery, also one in the shuttle, and make sure that all three of the rings on bobbin in the shuttle are properly caught in the shuttle spring. Looking from behind the loom, pull the transfer hammer down, by hand, against the empty bobbin in the battery and make a pencil mark on the polished back of the transfer hammer directly in line with the center ring on the bobbin, as shown in Figure 4. Then remove the bobbin from the battery and turn the lay to extreme front center position with the transfer hammer at its lowest position on the transfer, then position the battery stand to put the pencil mark on the hammer directly in line with the first ring on the bobbin in the shuttle, indicated by dotted line in Figure 4. When this is done also see that the back side of the transfer hammer clears the inner back wall of the shuttle about 3/16 of an inch. Then tighten the bolts, holding the battery stand, securely. Then drill the holes and insert the dowel pins. While this work is being done make sure that the shuttle has previously been properly boxed and is pulled all the way back against the picker, as shown in Figure 4. Of course, the reed should be kept in perfect line with the back box plates at all times, but this is vitally important when using the battery gauges, furnished by the loom builders, to determine the correct position of the battery stand, the gauges are placed and used in such a way that the correct positioning of the battery is dependent on the correct alignment of the reed.

Setting the Harness

Shown in Figure 5 is the plain two-harness motion, or what is known as the roll and shaft top motion. First, examine the treadle rolls and treadle roll pins and make sure that they are in good condition, not excessively worn and the rolls turning freely. Adjust the treadle shaft

(*Continued on Page 29*)

Skilled and Experienced Workers Predominate in Draper Shops

Five Men Have Worked a Total of 298 Years

Seated—Left to right, Albert Boover, 63 years, polisher Temple Roll teeth; Pat Dillon, 62 years, screw inspector; Thomas Kelly, 59 years, loom erector. Standing—George Schultz, 58 years, foreman; Thomas Gaffney, 56 years, rigger in foundry.

Terms of Service of Draper Shop Workers

Over 60 Years	2
50 to 60 Years	10
40 " 50 "	65
30 " 40 "	145
25 " 30 "	127
20 " 25 "	251
15 " 20 "	296
10 " 15 "	276
	1172

The loyalty of its shop workers and the Corporation's appreciation of that loyalty are shown by the record of long-time service of Draper workers. More than 45% of the 2590 workers in the Hopedale shops have been continuously working for the company for more than 10 years. Our branches at Spartanburg and Beebe River have been established too short a time to be included in this tabulation, but the help there apparently are on the way to make a similar record. Taking all plants together, less than 1% per year leave us permanently.

The total of long-time employes would have been greater but for the large turn-over of the war years 20 years ago when our country drew upon us very heavily for soldiers and skilled mechanics in essential war industries. The number of men working from 20 to 30 years undoubtedly would have been larger but for this draft.

Skilled help as well as shop equipment make Draper products and Draper service what they are.

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

Propose 10,000,000 Bales Cotton a Year Domestic Consumption

With domestic cotton consumption of 10,000,000 bales a year as its objective, The Cotton-Textile Institute will immediately undertake a nation-wide program to increase American cotton consumption by 25 per cent over its all-time peak, Dr. Claudius T. Murchison, president, announced July 21st.

The program, which has the approval of the Board of Governors of the American Cotton Manufacturers' Association, will integrate the merchandising, promotion and research efforts of the industry with the sales and advertising efforts of the country's wholesale and retail distributive outlets, and with the activities of the Federal and State governments.

"Despite near-record consumption at the present time," Dr. Murchison said, "cotton has been severely depressed by a combination of factors—the loss of perhaps 4,000,000 bales of exports due to the war, the increase in world production resulting from a policy of national self-sufficiency followed by many foreign nations, and the inroads of competing fibers on the traditional cotton market.

"We have finally come to recognize," Dr. Murchison said, "that the salvation of the cotton farmer is cotton consumption rather than economic nostrums, however palatable they may appear to be. To attain an annual domestic consumption of 10,000,000 bales would seem to be a miraculous feat, and yet careful study of all markets and of all applications encourage the belief that this hitherto unheard of figure can be achieved.

"The possible benefit to the South is inestimable. Ten million bales sold in this country will take up the slack of our lost foreign markets, increase purchasing power, stimulate Southern industry, make more jobs, take men and women off the relief rolls and reduce government expenditures in connection with its cotton program. But the nation as a whole will be the beneficiary, for one out of every ten men, women and children in the United States depends directly upon cotton for a livelihood, while hundreds of thousands of others, in many industries, can thank cotton for part of their income.

"While cotton is an old fiber, it possesses dramatic qualities that no other fiber, natural or synthetic, can boast. And it possesses a versatility that finds expression in more than a thousand uses. Forty per cent of all cotton consumed in this country goes into wearing apparel, 20 per cent in home furnishings and 40 per cent in industrial applications."

In connection with the inauguration of the program, Dr. Murchison began a tour July 22nd which took him to Raleigh, N. C., July 23rd; Charlotte, N. C., and Spartanburg, S. C., July 24th; Atlanta and Columbus, Ga., July 25th; Birmingham, Ala., July 26th, and New Orleans, August 1st. He met with leading representatives of the Southern textile mills and with co-operating groups in the cotton and distributive industries.

Hosiery Manufacturers Will Meet Sept. 13-14

The annual meeting of the Southern Hosiery Manufacturers' Association will be held at the Grove Park Inn in Asheville on Friday and Saturday, September 13th and 14th, it was announced by Taylor R. Durham, of Charlotte, N. C., executive secretary.

Mr. Durham said that an interesting and instructive program is being planned and a large attendance is expected.

Fall From Scaffold Fatal To Painter At Southern Bleachery

Greenville, S. C.—Joe Marshall, about 37, of Anderson, died here July 20th of injuries received when he fell 38 feet from a swinging scaffold at the Southern Bleachery plant in Taylors.

Coroner George W. McCoy said Marshall and A. C. Evans, also of Anderson, were painting near the top of an addition to the bleachery building when a safety rope which Marshall had just loosed slipped from his hands, throwing his end of the scaffold down and plunging him to a concrete walkway below.

Marshall died between Greenville and Taylors in the ambulance which was rushing him to General Hospital. Evans was pulled to safety through a window.

Cotton Bale Cover Program Continued To June 30, 1941

Washington, D. C.—Continuation of the cotton bagging for cotton bales program for the fiscal year ended June 30, 1941, was announced July 24th by the Surplus Marketing Administration of the Department of Agriculture. Designed to encourage the use of American-grown cotton for cotton "patterns" or bale covers, the original program was approved by Secretary of Agriculture Henry A. Wallace on May 1, 1940. It will be carried on through the new fiscal year to make its use possible in connection with this year's cotton crop and to provide more time for the manufacture and sale of the patterns.

Continuation does not change the maximum quantity of 1 million patterns called for under the program as approved May 1, 1940. All of this total has been allotted to six manufacturers whose applications to make the bagging have been approved.

Under the program, payments of 25 cents per pattern will be made to participating manufacturers whose applications have been approved and who have agreed to make the patterns and sell them to cotton producers, ginners, cottonseed oil mills, distributors of cotton bagging, or other eligible purchasers.

The continued program is similar to a program ending June 30,p 1939, under which 1 million bale covers of cotton fabric were used. It represents one of the new use projects undertaken by the Department of Agriculture.

Airdye Corp. Builds Warehouse and Lab at Rock Hill, S. C.

A new chemical manufacturing plant is to be put into operation in Rock Hill soon. A contract has been let by the Airdye Corp., of Fairlawn, N. J., to Rock Hill Lumber Co. to build a structure to house a warehouse and a laboratory. The building will contain about 2,500 square feet of floor space.

A NEW DU PONT CHROME COLOR

● An important requisite of upholstery fabrics is the ability to withstand hard wear. The colors must meet existing style and processing requirements and be as durable as the material on which they are used. By virtue of their inherent properties, chrome colors are widely employed for this purpose . . . The range of Du Pont chrome colors for wool is now augmented by the production of

Pontachrome Fast Red* 2RL

(PATENT APPLIED FOR)

- **Produces bright, intermediate shades of red.**
- **Possesses very good light fastness.**
- **Fades evenly without change of shade.**
- **Recommended as a shading color where light fastness is essential.**
- **Satisfactorily meets most processing and service fastness requirements.**
- **Dyes levelly, exhausts and penetrates well and is readily soluble.**
- **May be applied to slubbing, loose wool, yarn, and piece-goods.**
- **Suitable for automotive fabrics, upholstery materials, men's wear worsteds and other types of woolen goods requiring good all-round fastness.**
- **May be applied in open kettles and other types of mechanical apparatus ordinarily used for chrome colors.**

Modern manufacturing facilities plus skilled technical supervision assure the user of quality products.

*REG. U. S. PAT. OFF.

DU PONT

E. I. DU PONT DE NEMOURS & CO. (INC.), ORGANIC CHEMICALS DEPT., DYESTUFFS DIVISION, WILMINGTON, DELAWARE

Cotton Textile Institute Publishes Important New Book

Tracing the aims of the Cotton-Textile Institute and discussing the problems the industry faces in the immediate future, a new book, "Spots and Futures," has been issued by the Institute to its members and the trade at large.

Addressing the industry in the preface, Dr. Claudius T. Murchison, Institute president, states that "we are entering upon a new era, the outlines of which are as yet indistinct. Powerful forces are at work.

"During the eventful fourteen years which have passed since its founding, the Cotton-Textile Institute has seen many changes. Gone is the supremacy of American cotton in world markets. Gone are the halcyon days of 1933 and industrial self-regulation. Going is the lobbyists' concept of direct political action. The Institute naturally has shifted the emphasis of its activity in order to keep pace with a rapidly changing world; today it is an economic organism."

Dr. Murchison outlines the activities of the Institute, concluding his dissertation to the industry with the statement that "success for the Industry depends upon the everlasting application of sound judgment to the business and upon the everlasting application of sound judgment to the business and upon the everlasting continuance of the many and diverse activities and services which, in their sum total, constitute a hard-hitting program of support for cotton and for the industry. Never before has the need been so great for an integrated effort on all fronts in behalf of cotton."

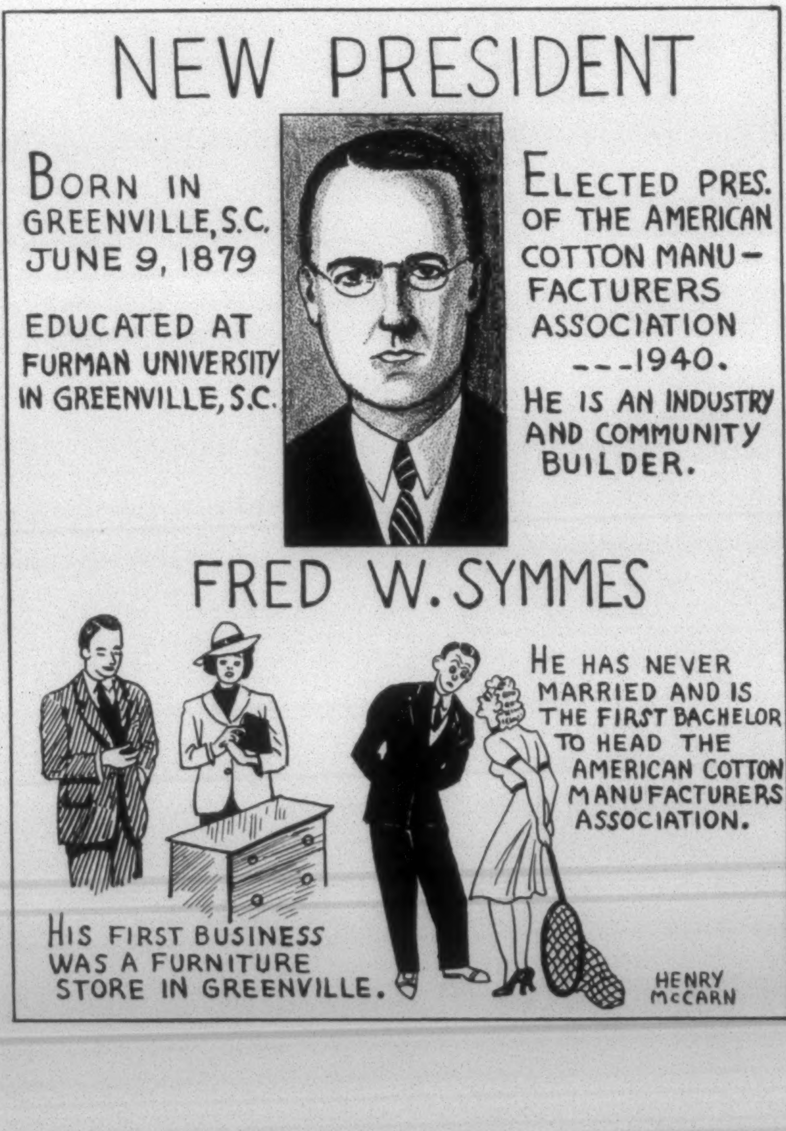
Chapter headings begin with "The Alphabet in Washington," in which the industry's relations with the Federal Government are discussed, including Federal specifications and legislation pertinent to the industry, the processing tax, the reciprocity program and raw materials. The second commentary deals with "Alliance for Profit," relating ways in which co-operation has benefited producers. Taken up for discussion are the Institute's executive committee, the industry group committees, the National Council of Textile Industries, co-ordinating group of textile executives, arbitration, exports, trade names and patterns.

The third chapter, "Decimal Points to Dollar Signs," leads off with the declaration that "in this complex world statistics have assumed a new importance. The statistical department has become the Intelligence Service." In this regard there follows a discourse on the Institute's weekly census of industry's output, employment an dearnings analyses, the "Hi-Lights" monthly summary and special statistical surveys.

Group cost surveys, cost booklets, the Institute as a cost information clearing house are dealt with in the book's fourth part, "A Matter of Cost." The work of the Institute's field representatives in giving assistance to mills comprise the fifth part, "Men, Miles and Mills." Leading promotional efforts to give constant impetus to consumption of cotton fabrics are touched up in the sixth part, "Campaigning for Cotton," including National Cotton Week, Work of the Cotton Consumption Council, promotion publicity, fashion development, films and books, swatch collections, traveling loan exhibits, research and development. Receipt of some 25,000 inquiries a year is noted in the concluding section, "Information Please," in which the Institute reiterates its willingness to aid mills in solving troubling problems, and declaring that "it (the Institute) knows that the right answer may help a mill executive in a particular problem, may result in desirable publicity for cotton, may steer a prospective customer to market."

The Textile Parade

By HENRY McCARN


NEW PRESIDENT
BORN IN GREENVILLE, S.C. JUNE 9, 1879
EDUCATED AT FURMAN UNIVERSITY IN GREENVILLE, S.C.
ELECTED PRES. OF THE AMERICAN COTTON MANUFACTURERS ASSOCIATION ---1940.
HE IS AN INDUSTRY AND COMMUNITY BUILDER.
FRED W. SYMMES
HE HAS NEVER MARRIED AND IS THE FIRST BACHELOR TO HEAD THE AMERICAN COTTON MANUFACTURERS ASSOCIATION.
HIS FIRST BUSINESS WAS A FURNITURE STORE IN GREENVILLE.
HENRY McCARN

Italy Grows Cotton

Rome.—The newspaper Messaggero said recently that experimental growing of cotton in Italy had been successful and that large areas would be planted for production on a commercial scale.

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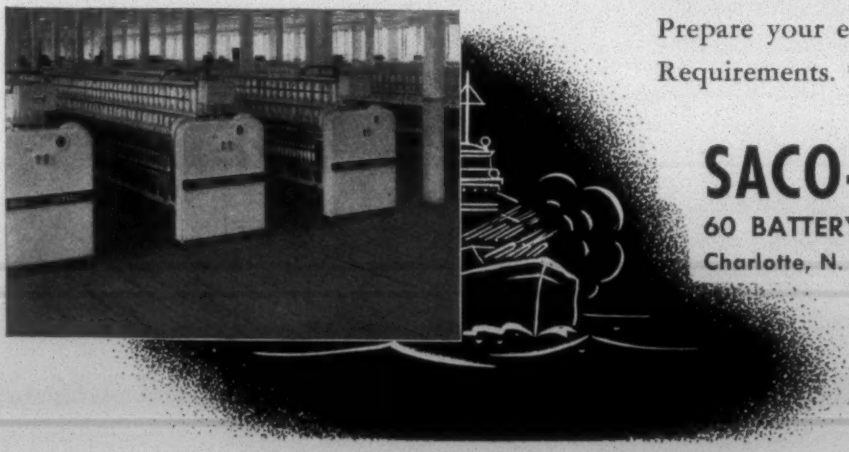
. . . or meet *M-DAY requirements with old and inefficient machinery.

The textile industry is a vital unit in the National Defense Program. Fabrics in tremendous quantities will be required for the armed forces, and these fabrics must be manufactured, not according to the standards of individual mills, but according to army and navy requirements.

Quality, strength, durability and uniformity are essentials which must be constantly maintained. Mills equipped with Saco-Lowell controlled draft units in Drawing, Roving and Spinning will be in "fighting trim" to meet these requirements . . . maintain these standards . . . and fill their quota within reasonable cost.



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Some Interesting Facts About Twist

By Tavis*

QUALITY, strength and maximum production being our aim in the manufacture of cotton goods, twist in the roving and yarns is our one and only means to that end, as there is no substitute for twist after the sliver reaches a certain degree of fineness. Therefore, twist is the prime factor governing the successful operation of our mills. But it should not be used, as it very often is, to cover up or hold together the avoidable mistakes and carelessness practiced in mills lacking the right kind of management, in one or more departments.

All practical men know how much easier it is to put in one or two additional teeth of twist than it is to get to the bottom of the cause for needing it, and then having to go to the trouble and expense of making the necessary corrections. But the shortest route is not the best one, as it breeds carelessness, and encourages neglect, that sooner or later will make conditions bad. It creates the opportunity of putting off little things until they multiply into large ones. This kind of practice is noticed mostly in neglecting to keep the machines in condition to produce the quality and quantity of work they are supposed to produce.

Twist Added to "Cover Up"

Extra twist should never have to be added to cover up carelessness or bad practice anywhere in the mill, as it reduces roll speed, lowers production, adds cost to the product and sometimes brings about undesirable changes in the quality. Too much twist keeps roving from drawing properly, causing lumps and hard ends. Not enough twist causes it to stretch and break back in the creels. Creels with broken skewer steps, skewers running without a step and blunt or choked skewers in the roving or spinning creels will not permit of making roving with standard twist, as it will stretch and break back. Where conditions of this kind exist the temptation for slipping in extra twist is noticeable.

Too much or not enough twist in the warp and filling yarns has a very bad effect in the operation of the spooling, warping, slashing and weaving of the yarns. If the warp thread is too hard it kinks at the spoolers and warpers, and the size will not penetrate the thread properly while being slashed, causing the cloth to look harsh, and also weave poorly. As properly sized warp yarn has about 12 per cent more strength than unsized yarn the right amount of twist to permit of good penetration is of prime importance. Filling that contains too much twist kinks and gives abundance of trouble, and filling with not enough twist breaks continuously, and stops the loom and the production also. With these facts before us we can see the importance of knowing the yarns and roving has the right amount of twist to operate the machines economically and produce good work.

Determination of Twist

Using cotton ⅞″ to 15/16″ to produce medium counts we can determine the turns per inch in the roving and yarns by multiplying the square root of the count by the following multiples, which is 1.20 for roving, 4.75 for frame warp yarn, and 3.50 for frame filling yarn. These multiples have to be increased very often for cotton less than the above lengths, and lowered as the length increases above 1 inch. Mills making ducks and osnaburgs with ¾ to ⅞ cotton producing numbers 7s to 9s very often find it necessary to increase the multiple as they do not as a rule use anything but the low grades, and sometimes with the opening lapping and carding machines not in the best of order.

The denim and covert mills using cotton ⅞″ to 15/16″ very seldom have to vary from the above multiples, as the warp number is 8s to 9s using strict low middling to good ordinary, and the filling yarns 12s to 16s using strict middling to middling. The sheeting and print mills and mills making jeans or twills using 15/16″ to 1-1/16″ cotton making numbers up to 50s as a rule use the original twist multiples except when spinning the yarns with 1-1/16″ staple which requires a multiple giving slightly less twist.

**The writer of this article is a well known carder and spinner in a Southern mill. Since some of the theories and formulas in this article are likely to be highly controversial, we are withholding his name at his request. However, any comment or criticism is welcome, if addressed to us.—Editor.

The following data is very interesting with reference to the count or number weight in grains of 120 yards, breaking weight in ounces per strand, twist per inch and the thread diameter. The thread diameter is for warp yarn with twist 4.75 × square root of the count.

$$\text{The Formula, } \frac{.00385}{\text{Sq. Rt. of count}} = \text{diameter of thread}$$

This formula is derived from the fact that 261 strands of No. 100 warp yarn if laid as close as possible together will fill a space of 1 inch.

The square root of the count × 26.1 shows the number of threads of any count that will fill a space of 1 inch as above.

Interesting Data

Yarn No.	Wt. (Grs.) 120 Yds.	Breaking Wt. Ozs. Per Strand	Twist Per Inch	Thread Diameter 1,000s inch
10s	100	20	15.01	12.11
20	50	10	21.24	8.50
30	33.3	6.66	26.02	7.0
40	25	5.0	29.07	6.06
50	20	4.0	33.53	5.40
60	16.6	3.33	36.57	4.95
70	14.3	2.81	38.14	4.56
80	12.5	2.50	42.74	4.27
90	11.11	2.22	42.95	4.03
100	10	2.00	47.50	3.83
10	10	10	3.163	3.163

Note that by dividing the greater amount by the lesser we get the figures at the bottom. It will be seen that by using a twist factor of 4.75, which is our inherited standard warp twist factor the figures below the line in the twist and thread diameter columns fully agree but the figures in the other columns do not agree with these two. However, by squaring them we get the same answer of 10.

Now, if we take the breaking weight of 10s, which is 20 ounces, and change it to grains, and divide it by the turns of twist in 10s we have 583.3 grains of breaking weight per turn of twist,

$$\frac{437.5 \times 20}{47.5} = 583.3$$

If we change the breaking weight of 100s to grains, and divide them by the turns of twist per inch for 100s, we get 58.33 grains of breaking weight for each turn of twist,

$$\frac{437.5 \times 2}{47.5} = 58.33$$

as 583.3 divided by 58.3 is 10, we still have the same answer, and we have learned that a turn of twist in a strand of 10s warp creates 10 times more strength than it does in a strand of 100s, as there is 10 times more fibres wrapped around each other. As stated before, when spinning yarns above 40s, if we use the proper length staple to suit the count we can get by with less twist, the amount depending on the length, and the kind of work turned out at the different processes.

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cent more breaking strength, as the fibres are more even due to the fact that the machines remove all fibres that are below a certain length. This alone permits of less twist without the sacrificing of strength.

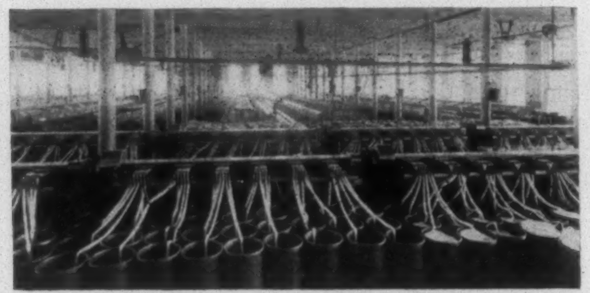
The table below which I am venturing to offer of roving and yarn multiples is the result of the information gathered over a long period of practice in the manufacture of cotton yarns with almost every type of cotton, and information obtained from others of the craft with equal or longer experience. As local conditions usually call for changes in most prescribed ways, it is likely that it will only be useful as a basis for avoiding too much experimentation. However, as we have no twist multiples suitable for the longer varieties of cotton it may bring criticism that will do the industry some good.

Suggested Twist Multiples for Different Length Cotton

Cotton Length	Yarn Number	Roving Multiple	Warp Multiple	Filling Multiple
¾	4 to 10	1.24	4.85	3.65
⅞	10 to 18	1.22	4.80	3.60
15/16	19 to 28	1.21	4.77	3.50
1″	29 to 40	1.20	4.75	3.40
1-1/16	41 to 52	1.19	4.70	3.35
1⅛	53 to 65	1.18	4.60	3.30
1-3/16	66 to 79	1.17	4.55	3.27
1¼	80 to 94	1.16	4.50	3.25
1-5/16	95 to 109	1.15	4.45	3.22
1⅜	110 to 124	1.14	4.40	3.20
1-7/16	125 to 144	1.13	4.35	3.10
1½	145 to 170	1.12	4.30	3.00

The Importance of Even Work

The twist in the roving and yarns runs to the smallest places, and luckily it does, as some of it very likely could not be pulled off the bobbins due to the unevenness from various causes. The twist in the roving runs very uniform provided the cotton is cleaned, carded and processed properly, and the tension necessary to wind it on the bobbins is kept right. But this is not so with frame spun yarns, as the traverse of the rings from top to bottom of the bobbins is continuously varying the twist, which if aggravated by other defects does not do the yarn any good.



On the warp frame this variation is caused by the traveler being at different distances from the rolls at all times by being carried up and down the stroke by the ring rail, and also by winding the yarn on the bobbins from empty to full. On the filling frames, the twist is constantly changing from the top to the bottom of bobbins, empty to full bobbins, and also from top to bottom of traverse of taper.

This variation in the twist is not taken into consideration when we calculate it from the speed of the spindles and the delivery of the front roll or by obtaining it by dividing the twist constant by the twist year. but nevertheless it is there.

For example: If the front roll of a warp frame delivers 314 inches of yarn per minute, the spindles run 7850 revolutions, the empty bobbin is 2 inches in circumference, and the ring rail is at the top, the turns per inch would be,

$$\left(7850-\frac{314}{2}\right)\div 314=24.50.$$

Assuming the traverse to be 7 inches and the rail goes to the bottom the twist at that point would be,

$$\left(7850-\frac{314}{2}\right)\div(314-7)=25.05.$$

With the rings at the top and the bobbins 6 inches in circumference, the twist per inch would be,

$$7850-\left(\frac{314}{6}\right)\div 314=24.83.$$

If we disregard these facts and divide the spindle speed 7850 by the delivery of the front roll 314 inches, the turns per inch is 7850÷314=25.00.

There is an opinion among a good many experienced spinners that the twist adjusts and evens up to a certain extent, but this has not been satisfactorily verified.

As the diameter and tension of the spindle bands on the spinning and twisting machines govern the twist to a certain extent, both diameter and tension should be as uniform as possible but this is not the case as a whole, especially in keeping the degree of tightness of the same. Small bands that do not slip run the spindles faster than large ones.

For example: Assuming the speed of the cylinder 1200 R.P.M. diameter cylinder 7 inches, diameter band ⅛ inch, and diameter whorl ⅞ inch.

The speed of the spindle is,

$$\left(\frac{7+\frac{1}{8}}{\frac{7}{8}+\frac{1}{8}}\right)\times 1200=8550\ \text{R.P.M.}$$

Example 2: Speed of cylinder 1200 R.P.M., diameter cylinder 7 inches, diameter band 3/32 inch, diameter whorl ⅞ inch

$$\left(\frac{7+3/32}{\frac{7}{8}+3/32}\right)\times 1200\quad 8790\ \text{R.P.M.}$$

The difference in spindle speed in favor of the smaller band is 8790—8550 240 revolutions per minute. Assuming the front roll delivery 400 inches per minute the twist per inch using the larger band is 8550÷400=21.37 turns.

The twist per inch using the smaller band is 8790÷400=21.87 turns. The difference is 21.87—21.37=.50 turns.

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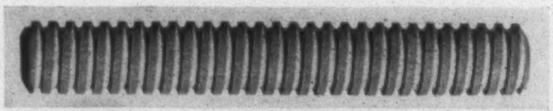

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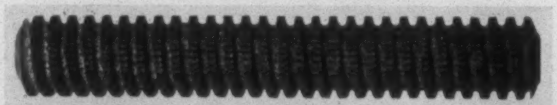

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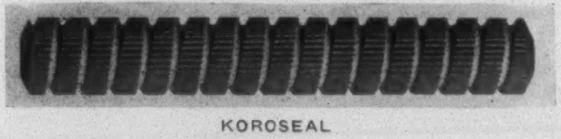

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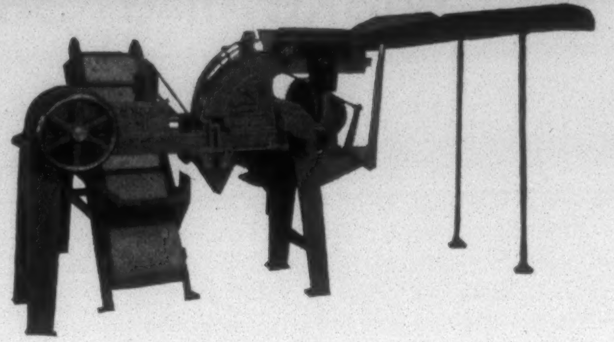

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Make the Safety Plan Fit!

By A. P. McIntosh

American Mutual Liability Insurance Co. Engineer

Any textile mill management which believes it can pick up a cut-and-dried safety program and make its plant conform to that program and get good accident-prevention results is due for an awakening, says Mr. McIntosh. The one sure way of doing the job is to tailor-make a program which will fit the plant, its supervisory set-up, its employee types, individual machine and work hazards, and plant layout. To do otherwise is to waste time, effort, money, and breed discouragement which may have a lasting effect on the entire organization.

ALL TOO OFTEN it has been emphatically demonstrated that the greatest single cause of safety program failure within the textile mill is the fact that but little, if any, thought has been given to the plant safety needs by whoveer initiated the program. Fundamental reason behind these misguided *attempts to make the mill fit some stock program rather than build a program which fits the mill* is ignorance of the fact that all safety programs are not cut from a pattern, that the desired results are achieved only when the safety program has been carefully and expertly tailored to take care of all individual peculiarities and problems.

Here's how the mistake is made. An executive realizes his losses through accidents and, in his anxiety to do something to correct conditions, adopts the safety program of a neighboring mill which seems to be getting excellent results. Usually, in the borrowing process, he has picked up only a smattering of the details of the plan, has failed to note that certain parts of the program do not have any bearing on his problems, or vice versa, that certain of his problems are not covered. Yet, if it worked there, it must work for him, so he sets it up "as is," and sits back to await results. When the desired results are not forthcoming he begins to look for lukewarm executive attitude, inefficiency of the safety committee meeting regularly, going through certain motions and seeing no improvement in his plant's accident experience, he, along with his supervisory force, begins to get discouraged. In some cases this discouragement has been so severe as to make the management conclude that their existing accident experience is one of the "headaches" peculiar to their plant and they have to bear with it, that safety is impossible for them. Thinking this way, they are quite frequently averse to giving safety another trial.

In some cases the mistake has been made by having someone who should know better recommend a standard safety organization, or simply a safety organization, and leave it with the mill executive or superintendent to work out his own salvation. Again the end result of no achievement usually occurs.

Four Factors Must Be Considered

In fitting the mill's safety needs the following four factors must be considered as seriously and as fully as possible: (1) the supervisory set-up, (2) employee types, (3) machine and work hazards, (4) plant layout.

(1) In considering the supervisory set-up, there must be considered the caliber of its membership and just how much, if any, overlap there is in departmental responsibility. In the average textile mill there is very little overlap of this sort, each overseer having his responsibilities all clearly defined. But there is a wide difference in the manner in which each overseer in the mill, but in different departments, handles his supervisory responsibilities. Some overseers handle their people like an army sergeant handles his platoon, while others treat their people as members of a large family. It cannot be expected to arbitrarily set up a supervisory safety function that will fit both of these cases, but Mr. Superintendent can be given a close study. Usually the army sergeant-type superintendent has surrounded himself with army-corporal type overseers and second-hands. A careful analysis of existing conditions makes it possible to devise a plan to fit each particular case. If either type superintendent leaves all employee-control to his overseers and second-hands, then the safety committee should be built around these overseers and second-hands and have them report safety activities to the superintendent in the same manner as they do their other activities. If the superintendent does not, or has not done this, and retains an interlocking employee control for himself, then the superintendent should be incorporated in the safety organization set-up.

The better worked out the safety organization details in keeping with mill supervision, the more efficient the program will be. There is one item which should not be overlooked; the mill executive must make evident his interest by meeting occasionally with the safety committee, in regular meetings or at a special meeting, and by letter of suggestion or commendation.

(2) Employee types should be given full study. Frequently, when approached on the idea of a safety program, the mill executive will insist that for certain reasons his labor problem is different from that of any other textile plant. Usually he goes into detail to substantiate this statement and by so doing he is revealing how he feels toward his labor and, second, he is giving an insight as to his caliber as an executive. Usually an executive gets the kind of people that he wants in his plant, or he consciously or unconsciously moulds them to the pattern that he wants.

Employee Safety Education

In all cases of employee safety education, it is best to follow with the three motivating factors of salesmanship: (a) personal benefit by keeping that which one has; (b) profit or gain for oneself; (c) profit and gain for others in whom there is a personal interest.

The injured employee has been found to be a veritable gold mine of information in accident investigation, by yielding his suggestions for prevention of a similar accident, but such a practice can only be followed by first asuring the employee that there will be no incrimination or personal criticism. Lions and lambs alike respond to kindness, notwithstanding the fact that different methods of applying kindness are used in each case, providing a cage for a lion and a pasture for the lamb.

(3) The machine and work hazards in most cases of practically all textile plants have been well protected, but of course there are instances where this is not true and these should be given special consideration. It is surprising the number of flimsy and makeshift physical safeguards that exist even in some large mills today which leads to the conclusion that this need has not been properly considered. Experience has demonstrated that a physical safeguard must be substantial but not cumbersome, it must guard the hazard but not handicap the operation and should be removable but not removed except for repairs.

(4) In studying the plant layout, there should be considered the number and size of departments, the number of employees involved and the number of shifts operated at the mill. Each department involves mechanical arrangements and hazards entirely different from others, and frequently there is serious difference in the caliber of the labor involved. For example, there is a wide variation between equipment and labor used in warehousing and yard operations and the finishing operations, and yet the mill safety program must fit the needs of both. Normally, the safety committee representation should be in a fair ratio to the number of employees, particularly in reference to the number of shifts. Where a mill operates only one shift per day, it is a much simpler problem to fit the safety needs than where the plant operates two or three shifts per day.

Frequently it is found that a mill started operating a great many years ago as a small unit, and in time has increased to a full grown operation, with two card rooms, or two spinning rooms, and frequently two or more weave rooms. Strange as it seems, there are a number of such textile plants in this category, in the South particularly. In such cases there is more or less cross-up of handling-material operations which develop accident probabilities abnormal to the average textile operations. For example: the employees of one department passing through another department, or departments, throughout each shift. Surely, this is defined as poor planning. Poor planning develops unusual accidents. It is then an obligation of the safety committee to better co-ordinate the operations if possible, and also present a wonderful opportunity for the safety committee membership to prove its merit, not only as an accident-prevention agency, but also an efficiency council.

The item of safety incentive should be given serious consideration in the safety program, not pecuniary reward, but merit recognition that appeals to the better part of humanity as a whole. A deserved pat on the back is more productive than a kick in the pants at any time. It is the obligation of the safety committee to recognize where merit is due and to so place it, and to alter the methods of recognition as plant conditions change.

To make the mill safety program more effective, the outlined four factors must be given the consideration due them. Mistakes are possible, but the pain of these mistakes can be alleviated by digging deeper and finding the reasons for failure in considering either supervision, employee types, machine and work hazards or the plant layout. And the answer will be found in one or more of the four if the digging is deep enough.

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Personal News

James Mair, formerly of Philadelphia, Pa., is now superintendent of the Penderlea Mfg. Co., Willard, N. C.

Lloyd Beacham is now superintendent of the Houston (Tex.) Cotton Mills.

A. F. Bell has succeeded C. W. Bendigo as superintendent of High Point Weaving Co., High Point, N. C.

R. C. Gary is manager and superintendent of the new Continental Hosiery Mills at Hendersonville, N. C.

George Farrell is manager of the Terra Alta Hosiery Mill recently established at Terra Alta, W. Va.

Alvin B. Shepherd is office manager of the Alamac Hosiery Co., Reidsville, N. C.

Stanford McDowell is superintendent of O. E. Kearns & Son, High Point, N. C.

R. H. Archer is office manager of the Randleman (N. C.) Full Fashioned Hosiery Mills.

J. S. Chaya has succeeded F. J. Archelman as superintendent of the Blackstone Weaving Co., Blackstone, Va.

T. A. Law has succeeded Bland Smith as president of the Brenham (Tex.) Cotton Mills.

E. W. Blombach is manager of the Minnewawa Mfg. Co., a woven label plant recently established at Knoxville, Tenn.

T. E. Marshall has succeeded Turner H. Bunn as secretary of the Rocky Mount Cotton Mills, Rocky Mount, N. C.

C. N. Bassett has succeeded J. K. Whitaker, of New York, as president of the Lone Star Cotton Mills, El Paso, Tex.

Fred Bunch, Jr., assistant treasurer of the Statesville Cotton Mills, Statesville, N. C., has been elected president of the Rotary Club of Statesville.

R. L. Sanford has been promoted from superintendent to general manager and vice-president of the Lone Star Cotton Mills, El Paso, Tex.

Dan R. Johnson has succeeded S. L. Carter as superintendent of the cotton mill at the State Penitentiary, Nashville, Tenn.

C. W. Bendigo has resigned as superintendent of the High Point (N. C.) Weaving Co., to become superintendent of throwing and preparation at the Dunean Mills, Greenville, S. C.

Donald Carroll has succeeded L. B. Swearingen as technical advisor at the Winnsboro (S. C.) plant of the United States Rubber Co.

Chas. Salzenburg has succeeded Ralph Carter as superintendent of the Schwarzenback Huber Co., Front Royal, Va.

Chas. F. Goodman has been promoted from superintendent to president of the American Finishing Co., Memphis, Tenn.

W. E. Rambow, former superintendent of the Enterprise Mill, Augusta, Ga., has succeeded J. T. Rogers as superintendent of the Vaucluse Mill, of Graniteville, S. C.

Oscar W. Roberts, Jr., of Carrollton, Ga., has been named as trustee in bankruptcy for the Banning Mills, Banning, Ga.

R. V. Martin is superintendent of Martin Bros., an elastic webbing plant recently established at Middlesboro, Ky.

J. J. Barnhardt, of Cannon Mills, has been installed as commander of the Fred Y. McConnell Post of the American Legion at Concord, N. C.

Craig Smith, vice-president and cotton buyer for Avondale Mills, Sylacauga, Ala., has been installed as president of the Sylacauga Rotary Club.

Milton Cooper, formerly of Washington, D. C., has joined the office staff of the Chatham Mfg. Co., Elkin, N. C.

Ralph Pope and Harold Bowen are now the superintendents of the Lucky Stripe Silk Stocking Co., Fitzgerald, Ga.

John W. McSwain, of the Winnsboro (S. C.) Mills, unit of the United States Rubber Co., and Miss Rebecca Brice Macfie were married recently.

B. B. Blackwelder, president of the A. A. Shuford Mill Co., Hickory, N. C., has been elected vice-president of the Hickory Chamber of Commerce.

L. M. Calhoun, Clemson College textile graduate of 1937 and formerly with the J. E. Sirrine & Co., engineers, is now with Drayton Mills, Spartanburg, S. C.

Earle Stall, president of the F. W. Poe Mfg. Co., Greenville, S. C., has been elected president of the Furman University Alumni Association for the coming year.

Russell N. Sewell, representative of the Bibb Mfg. Co. in Chicago, and Miss Susan Blanche Kidd, of Lavonia, Ga., were married recently.

W. E. Williams is now assistant superintendent of the Bevelle Plant of Avondale Mills, Alexander City, Ala.

William Candler is now superintendent of the Villa Rica Cotton Mills, Villa Rica, Ga.

C. A. Beckwith is superintendent of the new Continental Hosiery Co. at Henderson, N. C.

H. S. Price, formerly of Merrimack Mfg. Co., Huntsville, Ala., is now superintendent of the Alabama Mills Co., Dadeville, Ala.

John F. Brasch, Jr., formerly with Louisville Textiles, Inc., Louisville, Ky., is now superintendent of the Habersham (Ga.) Mills.

Dee Ellison, of Belton, S. C., has become purchasing agent of the Grendel and other mills controlled by J. P. Abney of Greenwood, S. C.

Allen Dyson, formerly overseer of the cloth room at the Sanford (N. C.) Cotton Mills, now has a similar position with the Dallas (Tex.) Cotton Mills Co.

J. Ben Doar, Jr., secretary of the F. W. Poe Mfg. Co., Greenville, S. C., has been elected a director of the Greenville Lions Club for a three-year term.

Fletcher Horn, of Lanett, Ala., who recently completed a course in textile engineering at Auburn, has accepted a position with the Celanese Corp. at Cumberland, Md.

C. E. Hatch, president and treasurer of the Brandon Corp., Greenville, S. C., has been appointed Industrial Chairman for the 1940 Greater Greenville Community Chest.

W. Reed Godfrey, who was for several years an erector for the Abbott Machine Co. and the Barber-Colman Co., is now second hand in the spinning room at the Hamrick Mills, Gaffney, S. C.

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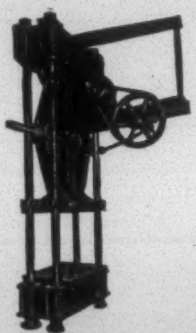

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Ralph N. Mallard is now superintendent of the Linen Thread Co., Blue Mountain, Ala.

H. P. Thomas has resigned as superintendent of the Villa Rica Cotton Mills, Villa Rica, Ga., to accept a position with the Piedmont Cotton Mills, Egan, Ga.

Edd Blackwood, formerly with the White Oak plant of the Cone Mills at Greensboro, N. C., is now overseer of spinning at the Dallas (Tex.) Cotton Mills Co.

Wm. J. Erwin, executive vice-president of the Republic Cotton Mills, Great Falls, S. C., has been elected chairman of the Great Falls school district board.

H. B. Miller, superintendent of the Florence Mills, unit of American Spinning Co., Greenville, S. C., has been promoted to the position of manager and superintendent.

John Cumnock is resigning as superintendent of the Warrenville, S. C., plant of the Graniteville Co. to accept a similar position with the Borden Mills, Kingsport, Tenn.

B. T. Horton, Clemson College graduate of 1936, has been promoted to head dyer for Plant A, Burlington (N. C.) Dyeing & Finshing Co., processors of rayon piece goods.

C. E. Folk, for seven years associated with the Burlington Mills Co., at the plant of Duchess Fabrics, Statesville, N. C., has resigned to accept non-textile work in Charlotte, N. C.

W. C. Bowden, formerly night superintendent at the Brazos Valley Cotton Mill, at West, Tex., has been appointed superintendent of the twine mill of the same company at Waco, Tex.

J. M. Cathcart, Jr., has resigned as purchasing agent of the Grendel Mills, Greenwood, S. C., and other mills controlled by J. P. Abney, to become superintendent of the Courtenay Mfg. Co., Newry, S. C.

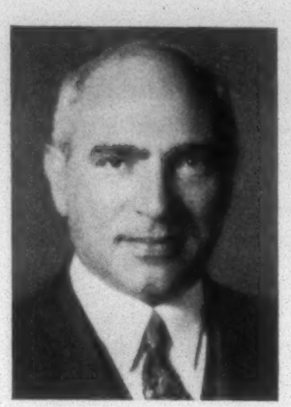
Robert Hope, who has served as superintendent of the Erlanger and Nokomis Mills, Lexington, N. C., has resigned. Mr. Hope is a Clemson graduate, 1926, and has been in these mills since his graduation.

George B. Peeler, N. C. State College Textile School graduate who has served as instructor in weaving and design for the past three years, has accepted a position as superintendent of Phenix Mills No. 2 at Kings Mountain, N. C.

Joseph A. Porter, Jr., has joined the staff of the textile school at N. C. State College, Raleigh, N. C., as instructor in weaving and designing. Mr. Porter has had practical mill experience and has served as instructor at the Danville, Va., Vocational School.

R. E. Towers, a son of D. D. Towers, general manager of the Anchor Duck Mills, Rome, Ga., and a recent graduate of the textile school of N. C. State College, has accepted a position with the Samoset Cotton Mills, Talledega, Ala.

Victor H. Berman Reappointed Park Commissioner



Victor H. Berman, president of the Onyx Oil & Chemical Co., Jersey City, N. J., has just been reappointed for another term of five years, as Commissioner of the Palisades Interstate Park Commission of New York and New Jersey, by Governor A. Harry Moore of New Jersey and Governor Lehman of New York. Mr. Berman was also re-elected treasurer of the Commission for another five years. Mr. Berman, who has always been an ardent Republican, received his apointment at the hands of Democratic Governors.

OBITUARY

DAN H. WALLACE

Greenville, S. C.—Dan H. Wallace, 65, for the past 29 years connected with the Keever Starch Co., and for the past 15 years as their Southern manager, died suddenly Sunday, July 28th. His death followed by only a few days his retirement from active service with the company.

Having traveled throughout the textile South for almost thirty years, Mr. Wallace was widely known and liked throughout the industry.

Born in Union, Mr. Wallace was the son of the late Judge William H. Wallace and Sarah Dunlap Wallace.

Mr. Wallace saw service in Mexico and during the World War as a captain of field artillery.

He is survived by Mrs. Wallace, who was Miss Helen Morgan, of Columbia, before their marriage, and the following sons and daughter: William H. Wallace, Dan H. Wallace, Jr., and F. M. Wallace and Mrs. John Ritchie III. He is also survived by one sister, Mrs. John Shepherd, and by five grandchildren.

LYNN W. BUCK

Charlotte, N. C.—Lynn Wilbur Buck, 82, retired business man, died here recently as a result of a fall on July 2nd, in which he broke his hip.

Mr. Buck had been a resident of Charlotte since 1902, and made his home with a daughter, Mrs. Charles Allison Torrence. He had been identified with the textile industry before coming to Charlotte, where he became Southern representative for Arnold, Hoffman & Co. Prior to his retirement from active business about ten years ago, Mr. tile plants in Gastonia, Monroe, Saxapahaw, N. C., and hesive Corp., of New York.

ERNEST A. DeWOLF

Ernest A. DeWolf, consulting engineer for the Universal Winding Co., died at his home in Providence, R. I., July 1, 1940, in his 73rd year. In point of service he was the oldest empoyee of the company and had served them for 48 years.

From 1900 until the outbreak of the war in Europe in 1914, he was in charge of engineering and commercial interests in Europe. He also established branch works for the company in Engand, France and Switzerland.

Since returning to this country, he had been connected with the engineering staff at Providence.

Mr. DeWolf had the confidence and affection of all his associates in the Universal Winding Co. as well as among the leading officials of many of the world's textile organizations. He was recognized as one of the best informed men in the country on the winding of textile fibres.

M. L. CUDD

Spartanburg, S. C.—News has been received here of the death of M. L. Cudd, 52, well known textile overseer, in Adams, Mass.

Mr. Cudd was well known in textile circles of this section, having seen service with the Inman Cotton Mill and the High Shoals Cotton Mills.

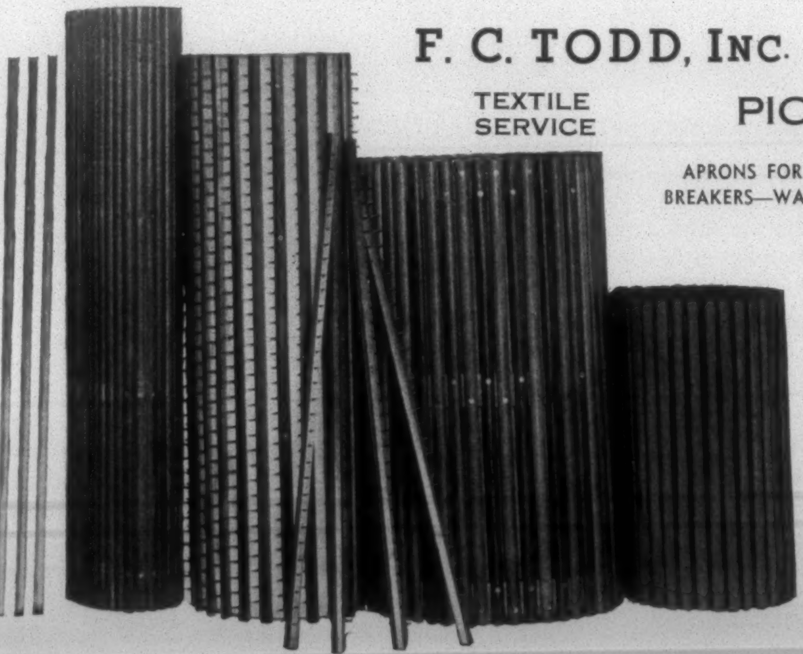
J. WILSON McCARVER

Kinston, N. C.—J. Wilson McCarver, 43, prominent textile executive and native of Gastonia, N. C., died July 26th in a hospital at Kinston from the effects of a ruptured appendix. He had been connected with the Glen Raven Mills at Kinston for the past two months.

Member of a prominent Gastonia family and a graduate of the textile department of N. C. State College, Mr. McCarver had been superintendent of the Hampton Mills at Clover, S. C., and had been connected with texthe oldest employee of the company and had served them Lenoir City, Tenn.

LOUIS E. MURPHY

Louis E. Murphy, 66, formerly president and chairman of the Board of E. F. Houghton & Co., oils, leathers and metal working products, Philadelphia, died on June 26th at his summer home at Mantalocking, N. J., following a short illness culminated by double pneumonia. He had been connected with the Houghton organization for 52 years, having started as an errand boy in 1888. He was elected secretary of the company in 1910, vice-president in 1914, and president at the time of Charles E. Carpenter's death in 1919. He became chairman of the board in 1934 when A. E. Carpenter was made president. After his resignation in 1936 he continued as a director up to the time of his death.



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TEXTILE BULLETIN

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A Dictator in the Making

If a President of the United States is to have three terms, why not four or five or a permanent tenure of office?

If a President of the United States may crack the whip over a convention, and openly dictate who shall be the candidate for Vice-President and therefore, if elected, the person to succeed him, in case of his death, why may he not crack the whip over a subservient Congress and with the aid of a personally controlled Supreme Court, dictate who shall succeed him, should he decide to retire or become incapacitated.

Hitler has decreed that Goering and Hess, in the order named, are to succeed him as dictators of Germany and Roosevelt has quickly followed suit in naming Secretary of Agriculture Wallace as his successor under similar circumstances.

The American people have for 150 years valued liberty and their right to choose those who shall manage the affairs of their Government but now a candidate for a third term, if not for a fourth or fifth term or a permanent tenure of office, crushes the ambitions of all, of his party, who aspire to be President and having dictated his own renomination, proceeds to crack the whip and name his running mate.

We admit that the selection of Secretary Wallace was appropriate, that is, appropriate to the philosophy of the New Deal which denies reward for individual initiative and effort.

Secretary Wallace's father left him a very fine and prosperous farm journal but, if our information is correct, it was nearing financial distress when he turned Democrat and was appointed Secretary of Agriculture.

Secretary Wallace may be a fine gentleman, personally, but he was not successful in work which he undertook in private life and if he had initiative and energy they were not demonstrated nor are they qualifications which would increase his prestige in New Deal circles.

Too much depends upon the course of the war to now predict what will happen in the November election, but we are unalterably opposed to giving any President of the United States a third term, knowing that he will certainly demand a fourth and a fifth term and probably a permanent tenure of office.

We are opposed to allowing any President to imitate Hitler and dictate who shall succeed him in case of death.

People Are Buying

There can be no denying that when the public buys freely, it has money and that an up-grade in business is indicated.

Chain stores sales for the first half of 1940 make a remarkable showing:

Firm	6 Months 1939	6 Months 1940	% Change
Sears Roebuck	$252,285,448	$277,398,030	+ 9.9
Montgomery Ward	185,913,831	204,237,361	+ 9.9
Safeway	200,380,668	211,541,968	+ 5.6
F. W. Woolworth	138,749,357	146,035,274	+ 5.2
J. C. Penney	115,655,858	125,305,051	+ 8.3
Kroger, G. & B.	110,018,922	118,052,786	+ 7.3
American Stores	46,973,291	53,406,755	+13.6
S. S. Kresge	66,663,889	68,725,057	+ 3.1
W. T. Grant	43,700,956	45,457,937	+ 4.0

Equally impressive are the sales for June, 1940, as compared to June, 1939.

Firm	June, 1939	June, 1940	% Change
Sears Roebuck	$56,768,082	$63,312,911	+11.5
Montgomery Ward	41,301,572	43,104,316	+ 4.4
Safeway	29,889,743	31,150,335	+ 4.2
F. W. Woolworth	24,662,032	26,020,384	+ 5.5
J. C. Penney	22,236,919	24,737,448	+11.2
Kroger, G. & B.	18,358,563	20,070,008	+ 9.3
American Stores	10,762,640	12,490,284	+16.0
S. S. Kresge	12,011,134	12,425,269	+ 3.4
W. T. Grant	8,385,007	8,910,536	+ 6.3

Bank clearings during the week ended July 17th rebounded sharply from the preceding Fourth of July week and were also substantially ahead of a year ago.

Latest reports from 23 leading cities totaled $5,454,598,000, a gain of 10.8 per cent from $4,921,775,000 in the comparable 1939 week and were $1,278,969,000 above the preceding week.

New York turnover rose to $3,040,433,000, an increase of 12.5 per cent from $2,702,735,000 in 1939.

The total outside cities increased 8.8 per cent to $2,414,165,000 from $2,219,040,000 a year ago.

The *Brookmire Commentator* says significally:

> It is still true that national income is considerably short of the 1929 peak. On the other hand, it is encouraging to see that the 1937 level is in fair way of being surpassed in the present year, and that the tendency continues definitely upward.
>
> While the possibility of devastation in England or of a forced peace must be watched to give a clue as to the short-term outlook, the longer-term future (especially with an essentially inflationary background) holds promise of improvement which will ultimately make current stock prices look low.

It appears to us that with the exception of a short period which may follow in event of a settlement between Germany and Great Britain, a period of exceptionally good business is ahead.

We believe that the time has come for firmer prices on cotton goods and yarns and to use care in selling ahead at present low prices.

Textile Directory Almost Ready

We are very much pleased to state that the printing of the new edition of Clark's Directory of Southern Textile Mills is almost complete and we expect to have copies for distribution about August 10th.

For some reason there has been an abnormal demand for textile directories. We printed the usual number of the January 1st, 1940, edition but they were all sold by March 1st.

We discovered that we had an extra supply of some sections and by reprinting the missing sections we were able to acquire 150 more copies but they were quickly sold.

We then adopted a plan of selling copies of old editions and giving the purchaser the right to exchange them for the new edition when printed.

That supplied the demand for a few weeks but since then we have, several times each day, told customers that there were absolutely no copies of our Textile Directory available.

We will certainly welcome the new edition when it comes from the bindery and we are again in position to fill orders.

The first edition of Clark's Directory of Southern Mills was issued on July 1st, 1911, and it has appeared on January 1st and July 1st of each year since then. The present edition will be the fifty-seventh.

In the future we will issue a completely revised edition on July 1st each year based upon actual reports from mills, while the January 1st issue will be only partially revised with such changes as have come to our attention.

Beginning with this summer, we will issue an Office Edition of Clark's Directory of Southern Textile Mills. It will be printed in large type and will contain many tables which will be useful to mill managers and treasurers.

Efforts to Increase Production

We congratulate Dr. Murchison and the Cotton-Textile Institute upon the efforts which they are making to increase the consumption of cotton.

The meeting of cotton manufacturers which was recently held at Raleigh, Charlotte, Spartanburg, Atlanta and New Orleans were well staged and the presentations were effectively made.

Facing a probable yield of 12,500,000 bales with an estimated domestic consumption of 7,500,000 and an estimated maximum export of 2,000,000 bales, the disposal of the difference of 3,000,000 bales is a serious problem. Then there is the prospect that a similar situation will exist next year.

The plans outlined by Dr. Murchison, especially the export subsidy upon cotton goods, seems practical and reasonable with the exception of the proposed increase in the tariff on jute.

The jute lobby is so powerful that even if our cotton mills stand idle and their workers are unemployed, we will still admit free trade jute, produced with 10 cents per day labor in India.

Power and Engineering Show Postponed

The Southern Power and Engineering Show which was scheduled for Charlotte on October 6th to 10th, inclusive, has been postponed to April, 1942.

While a large portion of the exhibit space had been sold and a large attendance was assured, the recently launched Defense Program made it necessary for all machine tool manufacturers to operate at capacity for many months to come and very few of them could spare either time or machines for an exhibit.

Without machine tool exhibits the show would not be entirely satisfactory and it was thought best to postpone.

If the war is ended by 1942, the Southern Power and Engineering Show will be held in Charlotte in April and therefore will alternate, in years, with the Southern Textile Exposition.

Mill News

GRANITE FALLS, N. C.—At a reported cost of $20,000 the Falls Mfg. Co. is constructing a three-story brick addition.

SWEETWATER, TENN.—The local plant of O. V. B. Knitting Mills has gone out of business and been liquidated.

MIDDLESBORO, KY.—Martin Bros. has established a plant with 87 looms for the manufacture of elastic webbing. H. C. Martin is president and treasurer and R. V. Martin, superintendent.

PIEDMONT, ALA.—The local unit of the Standard-Coosa-Thatcher Co. has been undergoing a modernization program which includes rearranging two spinning departments, the addition of further spinning equipment, installation of long draft roving equipment, and other changes. The work is scheduled to be completed soon.

RANLO, N. C.—Announcement has been made of the complete remodeling of all residences, mill buildings, and warehouses of the Spencer Mountain Mills here. The work is well under way at this time.

All of the 70 mill houses are being reroofed, repainted inside and out, and generally put in repair. The mill building is being completely done over. It has been in continuous operation since 1874.

ROCK HILL, S. C.—Officials of the Aragon-Baldwin Cotton Mills have announced plans for the construction of an addition, which will be one-story, and which will measure 57 by 130 feet, for expansion purposes. Approximately 400 Draper looms have been purchased by the company and these with new auxiliary equipment will be used to replace certain present machinery that has become obsolete.

ICARD, N. C.—At the plant here of the Icard Cordage Co., some construction work has been under way on the plant addition, which measures 40 by 75 feet, and on the erection of a new cotton warehouse. The addition was added to the main mill structure, and was built for a stockroom and shipping department. The new cotton warehouse measures 50 feet by 100 feet and is one story. The work of both has been completed.

ANNISTON, ALA.—The Anniston Mfg. Co., manufacturers of gray drills, twills, sheetings and osnaburgs, is installing one new Babcock & Wilcox 200 horsepower boiler with a Detroit stoker, and a new Cochrane feed water heater. The total expenditures, including the necessary building changes, boiler, stoker and auxiliaries necessary for the installation of the new equipment will amount to approximately $20,000.

BREWTON, ALA.—The Bonita Ribbon Mills, which were established at this place, with 54 looms, are now in operation. L. L. Levy is superintendent.

CAMILLA, GA.—The Camilla Hosiery Mills, which were placed in bankruptcy and purchased by the RFC, are still idle. No plans for putting them in operation have been made.

DALTON, GA.—Work has been completed on the construction of a new mill structure to house the Novelty Mills, Inc., here. The new building will provide four times as much space as formerly. Operations in the new unit will be inaugurated shortly in the manufacture of chenille bedspreads.

LAURENS, S. C.—An addition to the new sewerage system at the Watts Mill village here has been announced by J. E. Sirrine & Co., engineers of Greenville, S. C., with the letting of the contract to Reed & Abee, of Asheville, N. C.

The new work will consist of a half-mile each of six-inch, eight-inch, and 10-inch cast iron pipe, making a total of 3¾ miles of six-inch pipe, 3-5/6 miles of eight-inch pipe and one-half mile of 10-inch pipe.

TAYLORSVILLE, N. C.—C. L. Chandler, of Gaffney, S. C., has purchased the buildings and real estate of the Carter Mills here, which have been closed down for some time. It was originally a yarn mill with about 7,000 spindles.

Included in the sale were 37 mill homes, the main mill building, a warehouse, a store building, and another two-story structure that was built as a warehouse, but later used as part of the mill.

Approximately $25,000 was the selling price, and no announcement has been made as to the final disposition of the property. Mr. Chandler is vice-president of the Jackson Mills, Wellford, S. C., Iva, S. C., and High Shoals, N. C.

MAYSVILLE, KY.—A two-story warehouse, 102 feet by 102 feet, will go immediately into construction under terms of the contract released by J. E. Sirrine & Co., consulting and designing engineers of Greenville, S. C., for January & Wood Co., manufacturers of carpet warp, seine twine, clothes lines, trot lines and cordage, at their Maysville Cotton Mills at Maysville.

Fiske-Carter Construction Co., of Greenville, S. C., got the contract for the warehouse which will have concrete and brick walls, steel beams, steel pipe columns, steel sash and roll-up steel doors. The basement floor is to be of concrete, the first floor of wood and the roof, the 20-year tar and gravel type. R. N. Adair is president of January & Wood Co., which was established in 1851.

MASTER MECHANICS' SECTION

Interesting Data About Bearings

PLAIN BEARINGS

EVER since the start of recorded history, man has been engaged in a search to overcome friction. friction. Wherever there is relative motion between two surfaces, friction results. It resulted when primitive man transported heavy objects on a sledge (sliding friction). Although lessened, it was there nevertheless when he rolled the sledge on round stones or logs (rolling friction). It was again reduced but still present when he developed the bullock cart with its crude wooden wheels (rolling friction between wheel and ground, and sliding friction between axle and wheel).

Three Types of Bearings

Yet after centuries of effort to minimize friction between two moving surfaces, to date man has found only one method of accomplishing this: the separation of the surfaces by some friction reducing medium. Three such media are now in widespread use: lubricating film, rollers, and balls, which have given rise, respectively, to the plain, the roller, and the ball bearing. Each of these types operates on a different principle, and it is the purpose here to analyze briefly the theories underlying each of these bearings and to show the effect on their application.

Construction of a Plain Bearing

Broken down into its simplest elements, a plain or sleeve bearing consists of a shaft or journal surrounded by a sleeve of suitable material. If the surfaces of the journal and sleeve were to rub together in a metal-to-metal contact, considerable friction would be produced, and thus they are separated by a film of some fluid commonly called the lubricant.

Purpose of Lubricant

Digressing for the moment into the field of fluid mechanics, we know that when a fluid wets its boundary surfaces, the molecules immediately adjacent to each boundary surface have zero velocity relative to that surface. When the body of the fluid is in motion, this adherence of the fluid to the boundary surfaces produces a slip or continuous shearing effect between adjacent layers of the liquid. This slip is resisted by the fluid itself and the extent of the resistance is measured by what is termed the *viscosity* of the fluid. The action of the fluid is analogous to the simple state of shear in a solid body, the only difference being that in the case of the liquid there is continuous distortion of the molecules. Thus if the two metal surfaces of a bearing are separated by an adequate fluid film, the shearing action of the film enables the two surfaces to move relative to each other with less friction than would be the case if the two surfaces were in a direct metal-to-metal contact. Any fluid which wets the boundary surfaces and has sufficient viscosity theoretically can be used as a satisfactory lubricant. Oil, however, is generally used because it is easily obtained, is stable, and has a viscosity which can be controlled in processing.

There is considerable scientific evidence to show that the shearing action of the fluid film of oil is present between the two bearing surfaces of a journal bearing only if the shaft "hydroplanes" upon the surface of the oil, and that this planing effect takes place only if:

$$\frac{ZN}{P} \geqq C \quad \text{where}$$

Z=viscosity of the oil
N=relative speed of the moving surfaces
P=normal unit pressure of one surface upon the other
C=a constant as determined by experiment

It can readily be seen that when the shaft is at rest

$$(N=0), \frac{ZN}{P} < C$$

and the fluid film breaks down, the lubricant is squeezed out from between the metallic surfaces, and the static condition is a metal-to-metal contact; or at best there is merely a thin, oily film resulting from the wetting action of the oil on the boundary surfaces. The absence of the fluid film in a plain bearing while the bearing is at rest results in a high starting torque and attendant wear on the bearing parts. Only as the shaft attains sufficient speed (thereby increasing N) does the shaft start to ride-up on the fluid film. If, however, too great a load is put on the bearing (increasing P), again the above expression $< C$ and the film breaks down, resulting in greater friction and wear. Similarly, any minute roughness in the finish of the shaft or sleeve, or any misalignment of the shaft after installation localizes the load to a small section of the bearing surface, increases the normal unit pressure on that surface, and breaks down the film. Likewise excessive heating of the bearing lowers the viscosity of the oil (decreases Z), and the film is not maintained. In addition to the above, other variables such as bearing clearances, clearance changes due to heat, the method of feeding the lubricant, the distribution of the lubricant, the bearing material and design—all of these affect the maintenance of the all-important fluid film in a plain bearing.

Degree of Friction

Naturally friction and wear go hand in hand. Some idea of the friction encountered under the various operating conditions in a plain bearing can be gained from the folowing coefficients of friction:

Dry bearing=.050
Bearing with oily film=.020 to .015.
Bearing with fluid film=.010

These figures are representative for the ordinary sleeve bearing, and demonstrate the extent to which a plain bearing is dependent upon the lubricant for proper operation—and also how essential it is that the fluid film be maintained.

Other Limitations of Plain Bearings

Certain other properties inherent in sleeve bearings should be mentioned in passing. A sleeve bearing is designed for even a moderate load capacity is far from compact, for it must have a large supporting area along the shaft, thus requiring that its length be as much as two or three times the shaft diameter. This is an undesirable feature where, as in electric motors, for example, a compact bearing unit is to be preferred. Also ordinary plain bearings will not carry thrust loads nor can they be used to best advantage in vertical mountings, and while flange and other types of special sleeve bearings *have* been designed to take thrust loads and to provide lubrication for vertical mountings, the lubricating problem has never been entirely solved. This fact alone to a great extent limits the application of sleeve bearings.

Plain Bearing Application

One feature of plain bearings—the ease with which they may be disassembled for inspection or replacement during overhauls—makes them superior to ball or roller bearings in some specialized applications where this is of prime importance.

In general, however, it may be stated that the application of plain bearings lies in areas where high precision, low friction operation, extreme speeds, or compactness along the shaft are not required—or where regardless of efficiency, first cost must be low. In this field the sleeve bearing does not compete with anti-friction bearings, but with the growing realization of the vital importance of good bearings regardless of the service required, more and more users are turning to ball and roller bearings every day.

ROLLER AND BALL BEARINGS

The roller bearings differs from the plain bearing in that the moving surfaces of the inner and outer races are separated by a series of steel rollers rather than by what is at best an uncertain film of oil. Rolling motion of the rollers is substituted for the sliding action of the oil; rolling friction is substituted for sliding friction—in theory at least.

Rolling vs. Sliding Friction

Rolling friction is produced when one body rolls over the surfaces of another—in this case, the rollers over the surfaces of the inner and outer races—and depends upon the hardness of the contacting surfaces and the radius of the rolling body. The theory of rolling friction is based upon the assumption that under load, the surfaces become slightly deformed at the point, or line, of contact, the effect of rolling being the same as if the surfaces were not deformed and the rolling body were required continually to pass over a small obstruction.

Ball Bearing Friction Components

Similar to the action of the roller bearing is that of the ball bearing, except that moving surfaces are separated by steel balls. A ball has the peculiar property not possessed by any other type of rolling body, that no matter *in which direction* a load is applied, rolling action takes place with a predictable amount of friction.

Essentially, the construction of a ball bearing consists of an inner and an outer grooved raceway in which the balls are free to roll. Invariably the radius of curvature of the raceways is greater than that of the balls. Theoretically, then, the contact between ball and race is a "point" of contact, in which case pure rolling friction alone would be encountered. However, our theory of rolling friction told us that the elasticity of a rolling body and of the mating surface causes them to become deformed at the point of contact, to the extent that a "spot" rather than a "point" contact is the result. Thus, even with ball bearings it must be recognized that there is a small amount of sliding friction, for with elliptical "spots" of contact some slip must naturally take place due to the variance of surface speeds within the spots. Also, to maintain the proper spacing of the balls a separator or retainer is used, which introduces another element of sliding friction (even as it does in the roller bearing).

Nevertheless, the ball bearing is the nearest approach to a friction-free bearing that has as yet been developed. Some idea of the relative amounts of friction encountered in the classes of bearings previously discussed can be gained from the approximate limits of their coefficients of friction:

Plain bearing	.01 to .05
Roller bearing	.0024 to .0130
Ball bearing	.0011 to .0037

In addition to the smaller coefficients of friction encountered in a ball bearing, the range of friction produced under various operating conditions is less. The above figures show that the frictional coefficient range of a plain bearing is about .04, in a roller bearing .011, and in a ball bearing .0026. To the ball bearing user this fact means that under various loads, speeds, and operating temperatures the bearing frictional loss, and hence the available power transmitted, is more nearly constant.

Adjustment vs. Maintained Relationship

An important advantage of ball bearings over the other two types of bearings discussed is that they require no adjustment. While it is true that adjustable ball bearings can be obtained for special applications, as, for example, for certain types of spindles, most ball bearings by virtue of their low-friction and hence non-wearing operation need not be adjustable. This means a reduction in periodic inspection and servicing costs, and precludes the danger of the bearing clearances being adjusted too snugly and perhaps causing the bearing life to be shortened through overheating. Instead, the radial and axial play in a ball bearing is established during its manufacture, and the bearing comes to the user adjusted for life. Consequently, the extreme degree of precision obtainable in a ball bearing can be predetermined at the time of manufacture, and the user assured of this precision being maintained.

Such is not the case with sleeve bearings, which must rely on take-up devices to counteract the effect of wear. Similarly, roller bearing manufacturers in an effort to compensate for wear have marketed tapered roller bearings which are adjustable. When such bearings begin to wear, indentation of the races and the race shoulders takes place, with the result that after adjustment the roll assumes a new position in the bearing, thus hopelessly destroying the exacting geometry of the tapered construction, which is so necessary for true rolling action in its case.

Function of Lubricant

We have seen previously how the lubrication of a sleeve bearing is of prime importance to its operation, for the lubricant must carry the load between the moving surfaces. The lubrication of anti-friction bearings is also important, as it serves to protect the bearing surfaces against corrosion, assists in the exclusion of dirt and water from the bearing surfaces by the formation of a supplementary seal, reduces the friction between balls (or rolls) and the retainer pockets, and aids in dissipating heat. Furthermore, roller bearings depend upon the lubricant to lubricate the rubbing surfaces of the shoulders and rollers. Inasmuch as ball bearings have no such cylindrical rubbing surfaces to be lubricated, it is thus apparent that of the three types of bearings, the ball bearing is the most independent of lubrication.

Capacity and Life

One of the most controversial subjects connected with anti-friction bearings is that of load capacity. Published figures as to load ratings, factors of safety, life expectancy, and the methods of arriving at these figures, are open to considerable dispute. It is difficult to establish a universal basis for comparing the capacity of one make of ball bearing with that of another, let alone for comparing the capacity of ball bearings with that of roller bearings.

However, this much can be said without fear of controversy. Any anti-friction bearing will support only that load which does not cause the elastic limit of the steel to be exceeded. Steel, like all other metals, has a crystalline structure, and failure under repeated stress occurs when the tiny metal particles are stressed beyond their elastic limit. The first sign of fatigue failure is a series of small cracks in the stressed surfaces, which become progressively larger under repeated stress until failure occurs.

In a ball bearing under load, the deformed area of contact between each ball and the raceways is under compressive stress, while that area immediately surrounding the contact area tends to resist deformation and hence is under tensile stress. As the bearing rotates, each point in the raceways is alternately under tension and compression as the balls move past that point. The length of time that a piece of steel will resist fatigue failure depends upon both the magnitude and the number of tension-compression-tension cycles of stress. Thus the unit stress imposed upon the bearing by its external load and the rapidity with which the balls move past a given point—in other words the speed at which the bearing is operated—are factors determining the useful life of the bearing. By definition, unit stress is the load per unit of area supporting that load. Obviously, if the load-supporting area of contact between balls and races is increased, unit stresses are lowered and longer life is obtainable. Or, on the same life basis, greater loads can be carried.

In order to increase area of contact, one or more courses are open: (1) increase ball size, (2) increase the number of balls, (3) make the race curvature more closely conform to the ball. The degree of conformity of race to ball is a compromise between maximum supporting surface and maximum friction on the one hand, and the minima of supporting surface and friction on the other, and could not be greatly changed without affecting bearing operation. Upon ball size and the number of balls, then, rests the greater part of the ball bearing's inherent capacity.

Before leaving this subject of capacity, it is worth noting that load capacity claims should be based on all-around capacity—not simply for some particular kind to which the bearing is especially adapted. No single roller bearing has capacity for thrust loads in *either* direction. The straight roller bearing has practically no thrust capacity at all, since thrust must be carried directly against shoulders, setting up great friction and consequent wear. This limitation has been partially overcome in the tapered construction, but even this bearing will carry thrust in only *one* direction, due to its open design, and even part of this thrust is inevitably carried against the shoulder.

Hence, the claims for roller bearing capacity are really limited to *capacity under certain conditions*—not the all-around capacity of the ball bearing, which carries radial loads and thrust in either direction with equal ease.

Strange as it may seem, the specific usage of the various types of anti-friction bearings is often determined more from custom than from any logical reason. Nevertheless, it can be stated that, in general, straight roller bearings are recommended where high capacity with respect to space limitations is required, where low friction is not important, and where two-way thrust loads are not encountered or need not be carried. Ball bearings, on the other hand, have more universal application. Speeds high or low, heavy radial and thrust load capacity, extremely low friction under all conditions, a high degree of precision—all of these are obtainable with ball bearings. It is thus apparent that the applications for ball bearings are almost unlimited. Whether the application be in the minute mechanism of a gyro compass or in the massive machinery of steel and paper mill equipment, the answer to most bearing problems is more and more often today found to be the ball bearing.—*The Fafnir Dragon.*

Alabama Textile Operating Executives Set Up Association

Auburn, Ala.—Representatives of Alabama textile plants gathered here to organize the Alabama Textile Operating Executives. Eighty-five representatives from 30 textile plants in the State attended.

The Alabama Textile Operating Executives, it was stated, was organized to sponsor semi-annual meetings at which common problems of textile manufacturing may be discussed.

Frank K. Petrea, of Talladega, was elected chairman of the organization. John Baum, Opelika, was named vice-chairman and B. H. Crawford, Auburn, secretary-treasurer. Executive committeemen include H. B. Bergfeld, Talladega; A. H. Randall, Birmingham; J. E. Warren, Sylacauga; F. F. Phillips, Siluria, and Nelson N. Harte, Huntsville.

Next meeting of the organization will be held in Auburn Nov. 9th.

R. W. Jennings, superintendent, Lanett Mills, was principal speaker at the first meeting, and short talks on projected work of the organization were made by Dwight M. Wilhelm, secretary, Alabama Cotton Manufacturers' Association, and R. W. Philip, Atlanta, secretary of the Textile Operating Executives of Georgia and editor of *Cotton*.

Frank Fuller Resigns From Borne, Scrymser Co.

Frank F. Fuller, since 1937 vice-president and director of Borne, Scrymser Co., manufacturers of technical oils, has announced his resignation effective July 15th.

For 15 years Mr. Fuller was associated with the engineering department of Bethlehem Steel Co., joining the sales staff of Borne, Scrymser Co. in 1929. Becoming sales manager in 1935, Mr. Fuller was two years later elevated to the executive position which he leaves. No announcement has been made regarding his future plans.

Joseph Lindsay To Lecture At Ciba Co. Summer School

Joseph Lindsay, Jr., head of the textile chemistry and dyeing department of Clemson Textile School, Clemson College, S. C., left on July 21st for New York City to give a series of lectures on textile chemistry and dyeing at the annual summer school at the main laboratory of the Ciba Co. This company puts on this training for young college men. Mr. Lindsay and several other outstanding men in their respective fields gave a similar series of lectures last summer.

Shipment of Hairy Leather From War Zone Has "Stormy" Voyage

A graphic story of the current European war and its effect upon our own textile industry's operations is told in a memo between the Danielson, Conn., office of the E. H. Jacobs Mfg. Co. and its Charlotte office.

According to the memo, two days before the invasion of Holland by the Germans, the Black Diamond freight and passenger ship S. S. Aun sailed from Rotterdam with 5,000 pounds of heavy hair leather especially tanned by the firm of Gebroeders Naeff at Lochem, Holland, for check straps. This was a regular monthly shipment arranged by Edward Jacobs Bullard, treasurer of the E. H. Jacobs Mfg. Co., upon his last visit to the tannery.

Three weeks later, the bill of lading arrived with draft attached, payable in Dutch Guilders. Between the date of sailing of the S. S. Aun and the arrival of the draft, the United States government had impounded all Dutch credits and there were no Dutch Guilders available or being quoted.

The import agents, The American Express Co., Dutch Commercial Attache in New York, the Holland-American Chamber of Commerce, the Export-Import Bank in Washington, the United States Department of State, and other agencies all co-operated in an attempt to solve the problem, with the following results:

The S. S. Aun was detained in English waters but finally arrived at New York and the leather was reshipped to Boston to go through custom; payment in Dutch Guilders was made by borrowing them from the American government; the heavy American duty was paid in American dollars.

It has been learned that the tannery at Lochem, Holland, was destroyed by the invading army and the two brothers Naeff who owned and operated the tannery are either prisoners in Germany or dead.

This is said to be the last source of supply of hairy leather strapping from the Continent of Europe until the war is over.

OBITUARY

J. S. BACHMAN

Rome, Ga.—John S. Bachman, prominent 63-year-old native of Rome, died July 24th at Tampa, Fla.

Mr. Bachman was formerly manager of the Anchor Duck Mills here and was well known in Southern textile circles. He was also a former president of the Rome Chamber of Commerce.

He had retired from active business in 1927 and had been a semi-invalid for many years after suffering serious injuries in an automobile wreck in Rome. He had been living in Florida for the past two years.

ANDREW WATT MUNGALL

Andrew Watt Mungall, aged 54, died at his home in Lindale, Ga., on July 1st. Mr. Mungall came South at the age of 16 from Manchester, N. H., where he went to work for his father, the late T. G. Mungall, at Pell City, Ala.

During his life he had been in charge of several dyeing plants throughout the South. At the time of his death he had been in charge of the dyeing plant at the Pepperall Mfg. Co., at Lindale, Ga., for the past 21 years.

For the past two years Mr. Mungall was retired, due to his health. He is survived by his widow, a daughter, Virginia, and a son, Andrew.

Erecting, Overhauling and Fixing Looms

(*Continued from Page 6*)

bracket to a point where the treadle rolls will track straight and equally divided on the harness cams. Determine if the treadle stirrups are in the correct places on the treadles. Turn the lay to back center position and adjust the top harness and jack straps to a position where the yarn in the down shed will just barely clear the race plate or shuttle race. Turn the lay to throw the shuttle to the opposite end of the loom and repeat the above procedure to set the other harness. Care should always be taken to make sure that the top harness straps are divided on the harness rolls equally and not lapping over at the end attached to the roll.

Adjust the harness roll shaft bearings to a point where the front harness will clear the hand rail or reed cap when the lay is at extreme front center position.

Shown in Figure 6 is the auxiliary shaft harness cam assembly. The purpose of the auxiliary shaft is to change, slow down, the turning of the harness cam in relation to the cam shaft. This permits the use of more than two harness. First, determine if the auxiliary shaft box, the auxiliary shaft nut, and the idle gear bracket are tight. Then make sure that the harness change gear, idle gear and auxiliary shaft gear is properly meshed with a minimum amount of lost motion.

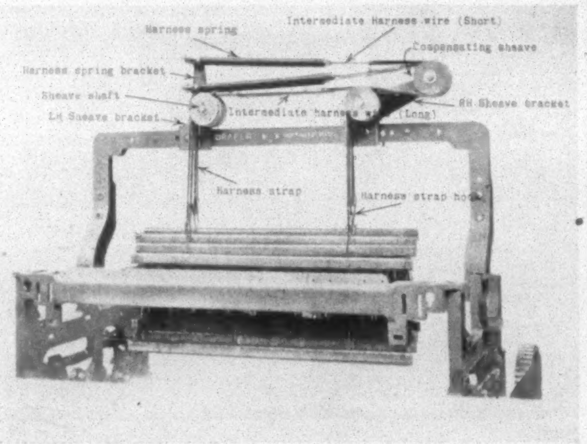

Figure 7

See that the treadle rolls and treadle roll pins are in good condition, and the treadle rolls equally divide and tracking straight on the harness cams. The harness cam arrangement shown in Figure 7 can be used for making, or weaving, cloth containing 2, 3, 4 and 5 harness.

Pull the lay to extreme back center position, the sheds should be wide open with the lay in this position, and adjust the jack and top harness straps to a point where the yarn in the bottom shed will just barely clear the shuttle race or race plate. When this is done be sure that the yarn in bottom shed is absolutely parallel with the race plate, the same clearance between the yarn and the race plate at each end of the loom. Adjustment should first be made on the front harness, then turn the crank shaft one revolution, throwing the shuttle to opposite end of loom. Repeat this operation until all harness have been adjusted. When using the roll and shaft top, be sure that

(*Continued on Page 34*)

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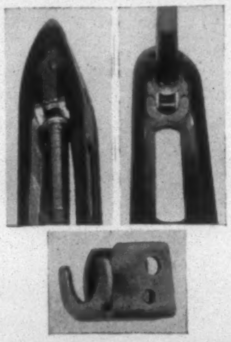

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Algodon Mfg. Co. To Dismantle Dye Plant As Result of Suits

Bessemer Cityl, N. C.—Litigation over dye wastes discharged from Algodon Mfg. Co.'s dye plant at Bessemer City, involving seven separate damage suits brought by people owning property along Oates branch, stream flowing near the dye plant and allegedly polluted by Algodon waste to the damage of property holders, was settled by compromise in Civil Superior Court recently.

The property holders in the seven separate suits were paid a total of $3,000 in compromise settlement of their claims and Algodon agreed to move or dismantle its dye plant by next January 1st.

New Red-Brown Sulphur Dye Offered By Calco Division

A new red-brown sulphur dye, said to be exceptionally brilliant, is announced by the Calco Chemical Division, American Cyanamid Co.

"Calcogene Violet Brown CF," the name of this dye, is recommended by the company for self-dyeing and for self-shade effects, and also in formulations when dyeing cordovan, mahogany and the redder shades of dark brown and tans. According to the firm, "Calcogene Violet Brown CF," has satisfactory solubility. This feature, combined with its level dyeing properties, is said to make it useful for cotton, rayon and linen material in various types of machine.

Another quality of "Calcogene Violet Brown CF," as reported, is its "exceptionally good affinity for viscose rayon staple fiber, producing shade effects of fastness sufficient to allow its use for blending with dyed wool stock. As its name indicates this dye has a minimum of copper and manganese, making it a 'copper free' color."

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Cotton Goods Markets

New York.—The week ending July 27th was one of dull and listless trading, with buyers searching hither and yon for price concessions and finding very few. Selling houses were constantly checking on reports and rumors of concessions, but found most of them to be for very small lots or for some other reason not of particular interest to the market.

There has been a great deal of publicity accompanying the recent placing of governmental orders, and from the daily press, not textile, it would seem that all of the mills in the country could run for months on governmental orders alone. However, while the business has been of very definite help, it is not enough to cause any major excitement in the industry. A goodly portion of this business has gone to woolen mills, which are not very plentiful in the South.

It has been disclosed that important buyers are not being misled by the immediate market quiet. As they look ahead they are not lulled into a state of false security in regard to continuously available production. If there is supposed danger now in having too many goods with business as it is, the future is supposed by some to offer threats for those too lightly covered. The result is that a number of important cloth users are understood to be quietly going over the situation to protect themselves potentially. Many have not gone into these things yet. One of the worries of certain buyers is in connection with cottons which take up so much time in yarn twisting that three shifts in spinning result in two for weaving. The result is that enlarged production is impossible in connection with such goods.

Cotton towels have done well, it is emphasized, by comparison with many another class of finished consumer goods. Lots of small orders are the practice of buyers; instead of their covering on larger amounts with less frequency. The situation is not the most encouraging to mill officials who see their production only partly taken up, unless they avoid progressive curtailment by making up unsold stock.

One of the most stimulating features is that retail stocks are low, for the nature of their needs proves this. Some jobbers have much to sell, since they usually cannot turn down offerings of so-called drop styles, seconds and other irregulars. Those making part linen crash towels and toweling have done a fair business lately. This, added to the progressive receipt of orders, accounts for mills being heavily engaged on contracts.

J. P. STEVENS & CO., Inc.
Selling Agents
40-46 Leonard St., New York

Cotton Yarn Markets

Philadelphia.—During the past few days there have been scattered lots of yarns that could be picked up for slightly under the prevailing list prices, but this business has been of such a scattered and uncertain nature that it could not be said that there has been any weakening in the price structure of cotton yarns.

The general attitude among the majority of yarn mills is that the business is bound to come sooner or later, and they are determined not to make too many concessions that might result in an operating loss. Deliveries lately have been satisfactory, and it is to be noted that much of the yarn now being delivered on contracts sold earlier in the year is at a higher price than current listings, which indicates that the small fluctuations recently have been of very little consequence.

Approaching the end of the month, July has not brought the further price advance some expected, on top of the June rally. But, meanwhile, spinners and distributors have maintained a sound position and since mid-year the potentialities have strengthened for at least as active a fall season as general business enjoyed in 1939.

In fine yarns of the Durene type, it is understood the future is deemed favorable by some for extending promotional activity into the better quality outerwear field, along the lines that have been successful in the underwear industry, as to all-cotton constructions, as well as blends of mercerized yarn with other fibers than cotton.

In some quarters there has been complaint recently over lack of immediate buying interest among commercial consumers of sale yarn. But elsewhere the receipt of new orders has been regarded as encouraging, though aggregate volume has not been very large.

Orders for the defense program have been large, and if things continue on the same trend that they have shown in the past several weeks it is likely that still further orders are in the offing. It takes a tremendous amount of everything to keep a large army equipped, and cotton yarn will come in for its share of the business.

Generally speaking, yarn mills have had a comparatively good year so far. Business has not been spectacular, but loss selling has been very little in evidence and the mills have not suffered more than seasonal slumps.

Rice Dobby
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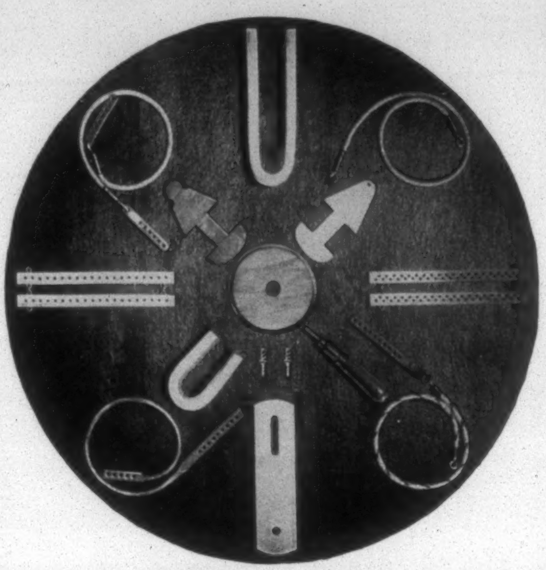

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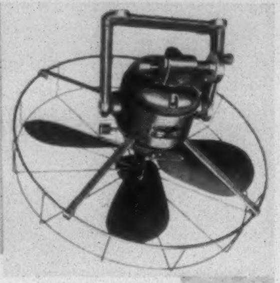

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Erecting, Overhauling and Fixing Looms

(*Continued from Page 29*)

all straps are properly adjusted, not overlapping, etc. Shown in Figure 7 is the Dwight spring top; in Figure 8 is shown the Lacy top. Either of these top motions can be used when weaving goods containing from two up to five harness. When using these top motions be sure that the sheaves turn freely without any binding whatsoever. This is vitally important, and necessary to the proper shedding of the harness. When using the Lacy top be sure that the strapping is properly divided and pulling correctly on the top harness rolls.

Comments On Harness Setting

The proper repairing and adjusting of the harness is one of the most important things a loom fixer is called upon to do. It is not a very difficult thing to learn and to do, but the proper time and care spent in this work will pay dividends in the long run. The harness should always be inspected carefully by the loom fixer, or some other capable person, before they are put onto the loom.

The treadle rolls should be divided and track perfectly on the harness cams. Otherwise the harness will not shed properly and the harness cams will wear off on one side very quickly and soon become unfit for use. The treadle rolls and pins are subjected to terrific strain and wear while the loom is running and will cause lots of trouble unless they are kept properly lubricated at all times. They cannot be oiled properly with a warp on the loom, therefore they are usually neglected and fires and other troubles result. Shown in Figure 9 is a practical way to insure the proper lubrication of the treadle rolls and pins. Drill two ⅛ inch holes all the way through the treadle rolls, indicated by dotted lines in Figure 9. There will be sufficient oil received and carried to the treadle roll pins to keep them lubricated, provided of course the harness cams are properly oiled. These holes will soon become filled with lint falling from the loom or warp. This lint will become thoroughly soaked with oil and thereafter will act as container or wick and will take care of the treadle rolls and pins. The Lacy tops harness shown in Figure 8 is widely used and is a good arrangement for the shedding of the harness, but requires some very close and delicate settings of the top strapping and rolls in order to obtain best results. The spring top motion, shown in

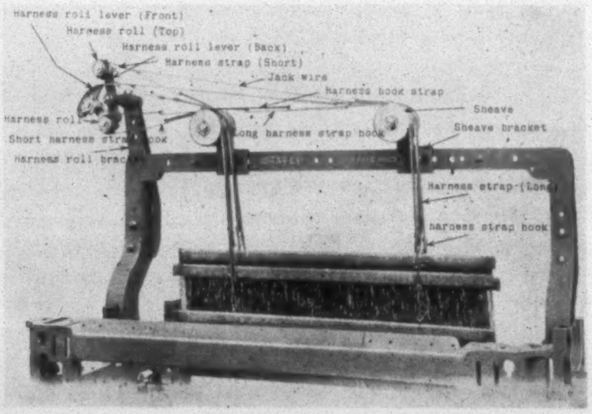

Figure 8

Figure 7, is a much more simple, or foolproof arrangement, and with the springs and straps hooked up properly will insure an even shedding of the harness at all times, as the treadle rolls will be held in contact with the cams the entire distance around the harness cams. The top sheaves on both of the harness motions must be kept in good condition and free from any binding whatsoever if best results are obtained. Also excessive oiling here must be avoided to prevent oil spots on the warp or cloth. It is a wise policy to keep several sets of these sheaves in a container filled with oil, and about every six months have the sheaves removed from the looms whenever the warp is out, and replace them with the ones which have been soakin gin oil. This may seem unnecessary to some, but will certainly pay dividends in many ways in the long run. When the spring top is used care should be taken not to have too much tension on the springs. The spring tension should be just enough to insure the lifting of the horness. More than this will cause excessive breakage of the springs, top strapping and the harness hooks, and all of this causes unnecessary loom stoppage and imperfections in the cloth. Where steel heddles are used, care should always be taken to divide the heddles on the ribs between the hooks. Otherwise there will be excessive chafing and breakage of the warp yarn, and in most cases will mark or streak the cloth.

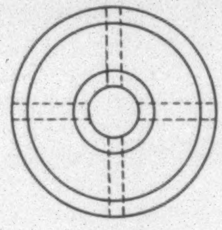

Figure 9

Hercules Reports Six Months' Earnings

Wilmington, Del.—Hercules Powder Co. reports for the first six months of 1940 net earnings of $3,293,066, after providing for depreciation and Federal taxes. This is equal, after payment of preferred dividends, to $2.30 a share on an average of 1,316,710 shares of common stock during the period. Figures for the first half of 1939 showed net earnings of $2,269,470, equal, after payment of preferred dividends, to $1.52 a share on an average of 1,316,710 shares outstanding.

Pickett Cotton Mills Open Own Yarn Selling Office

Philadelphia, Pa.—Pickett Cotton Mills, High Point, N. C., has opened offices here for the direct sales of its cotton yarns. They are located in the Drexel Building, Fifth and Chestnut streets, and will be in charge of H. D. Sears, Jr., who will have charge of the selling of the Pickett yarns in all territories exclusive of the South where the trade is solicited direct from the mill at High Point. Mr. Sears has previously been connected with the main offices of Pickett both in the mill and covering the trade. The firm spins a wide range of carded and combed for weaving and knitting.

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Last Longer, Make Stronger Yarn, Run Clear, preserve the SPINNING RING. The greatest improvement entering the spinning room since the advent of the HIGH SPEED SPINDLE.

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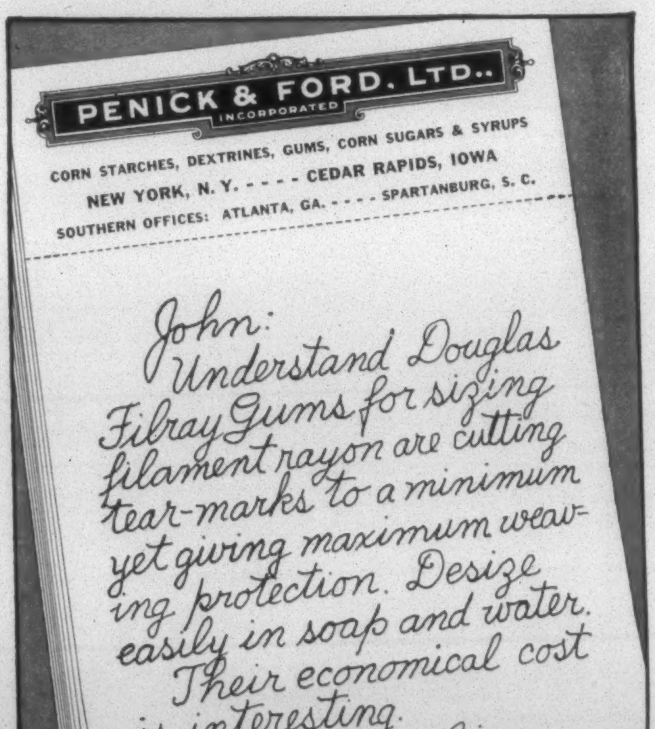

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Understand Douglas Filray Gums for sizing filament rayon are cutting tear-marks to a minimum yet giving maximum weaving protection. Desize easily in soap and water. Their economical cost is interesting.
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The World Cotton Situation

(Continued from Page 3)

a few. Indeed, South America and the United States are competitors in the production for export of numerous commodities, principally cotton and grain. Closer economic relations between Europe and South America will almost certainly be accompanied by closer political contact, which will render more difficult our enforcement of the Monroe Doctrine. On the other hand, if South America, Africa, and Asia pre-empt the European cotton market, for example, what are we going to do with our cotton surpluses?

These momentous questions are a ringing challenge to our realism, our vision, and our ingenuity. Nobody knows the answers, but the direction in which we should seek a solution of these problems may be suggested.

First, as to Latin America: It is vital to the successful enforcement of the Monroe Doctrine that everything possible be done to draw closer the ties of trade and amity which already exist between Latin America and the United States. There must be no waving of the big stick. We must play the commercial game fairly. We must stop subsidizing our trade where it comes into competititon with theirs.

We should study the development of resources and commercial possibilities in Latin America with the view of bringing their economy into a more complementary relationship to ours, and we must be prepared to invest large sums of capital there to that end. We must find ways and means of buying more Latin American goods, or risk redoubled totalitarian penetration there of an extremely dangerous character.

Now, as to our trade with Europe: For years we have sold much more to Europe than we have bought from her. When the war ends this trade unbalance will certainly be corrected. If this correction is accomplished by the simple process of shifting European purchases of raw materials from the United States to those countries willing to accept payment in goods, it will be a heavy blow to our entire domestic economy. American cotton would naturally be the chief sufferer.

We cannot afford to surrender our European markets for cotton and other raw materials without exerting the utmost endeavors to hold them. The only apparent way to hold these markets is to be realistic about the matter and be prepared to trade our goods for theirs, scrapping the tariff in the process. With so much of our industrial plant and labor diverted to the production of military supplies, this suggestion may not be so difficult or radical as it may at first appear.

Bilateral, or barter, systems of international trade are cumbersome and destructive of trade itself. If any substantial part of world trade has to be done on that system, it will result in a serious contraction of world trade and a regrettable lowering in the standard of living. A lowering in the world standard of living is inevitable in any case, but it could be relatively short-lived with international trade conducted on a multi-lateral or free exchange-gold settlement basis.

With an Allied victory, international trade could be re-established at the end of the war, on a free exchange-gold settlement basis, using a portion of the huge gold holdings of the United States to get the system working.

A victory by the dictators appears definitely to bar any such solution; nevertheless it should not be excluded as one of the possibilities.

The United States has consistently stood for the principle of multi-lateral trade as opposed to the so-called barter system, but if the rest of the world adopts totalitarian methods of trade, we will be compelled to conform if we wish to sell our surpluses. Barter means the swapping of goods for goods. Obviously, that can only be done in our case by setting aside the tariff in many particulars.

The alternative to this course is to so readjust our economy as to become almost entirely self-contained. This would involve such far-reaching and radical changes, accompanied by so severe a reduction in our standard of living, that it is very doubtful if democracy would survive the shock. Just as one example, there would be the problem of the two million farm families in the United States whose production is normally required for export, not to mention the more direct and immediate effect on the South of the loss of our cotton exports.

Rather than undertake any such radical readjustment, would it not be much wiser to trade with the rest of the world in whatever way may be open to us, meanwhile working with every means in our power to restore international sanity as quickly as possible?

Fateful days lie ahead—days which will test our patriotism, our mettle, our ability to make sacrifices. Every one of us, each according to his circumstances, will now have to make a contribution to the preservation of our way of life. History must not say of us, "Too bad, but they couldn't take it!"

When the situation becomes somewhat clearer, doubtless the President of the United States will tell us what we face and will give us a kind of blueprint of what we must do to stop this juggernaut of destruction before it reaches the Western World.

The American people are entitled to the whole story, bad as it may be. That they can chin whatever program has to be followed, when they understand it, let no man for one moment doubt.

Testing Company Installs New Conditioning Room at Its Southern Testing House

The United Testing Co. has just completed installation of a new standard temperature and humidity controlled conditioning room at its Southern Testing House in Greensboro.

All materials should be tested in a standard atmosphere of 70° F. and 65 per cent relative humidity. Summer heat and humidity make it impossible to maintain standard conditions without complete up-to-the-minute conditioning equipment.

The new conditioning room is insulated with 1½" thick vapor sealed Celotex and illuminated with the new fluorescent lights. Parks-Craemr Co. installed air conditioning and dehumidifying equipment. The room will be controlled in accordance with A. S. T. M. requirements for standard atmosphere.

The United States Testing Co. has issued an invitation to all Southern mills to inspect the new equipment at the Southern Testing House, 1200 Arlington Street, Greensboro, N. C.

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ASK FOR DEMONSTRATON

Our well equipped chemical staff, directed by Dr. Seydel, a renowned chemist (honored by American Chemical Society as councilor), will help you with your sizing and finishing problems.

"A company is known by the customers it keeps."

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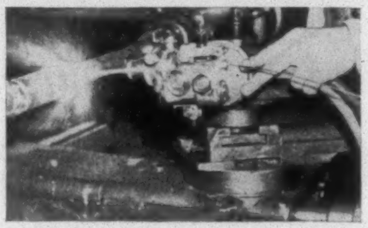

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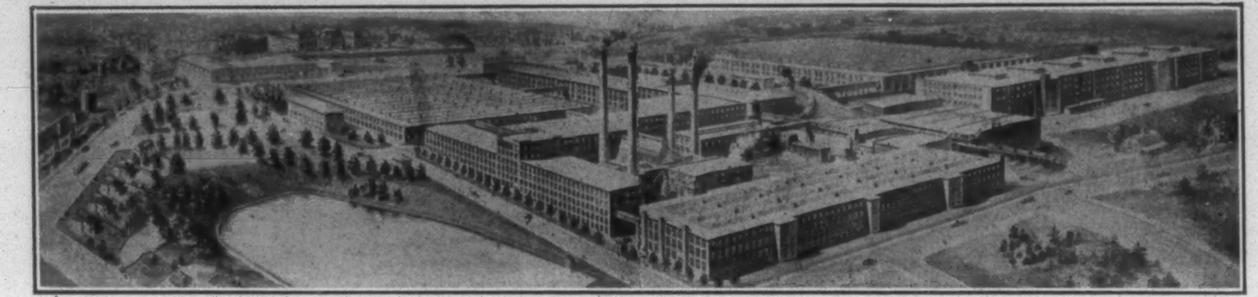


Visiting the Mills

Intimate Glimpses of Activities in Southern Textile Plants and the Men Who Own and Operate Them.

By Mrs. Ethel Thomas Dabbs (Aunt Becky)

RALEIGH, N. C.

Pilot Mills Co.

It is with real pleasure that we make annual visits to this delightfully friendly mill community, where operatives are so loyal and efficient that few changes are necessary. There are few, if any, mills in the South handling more colors or a more varied line of stylish goods, draperies and upholstery being leaders.

Just south of the mill village, toward the city, the Government has erected a group of apartment houses to be rented reasonably.

Troy Liner, a young loom fixer, has been called to preach. His father is a Baptist minister of High Point, N. C. Troy has a lovely wife and three bright children. He holds his job in the mill, substitutes for other preachers and does other spiritual work. He is a fine, conscientious young man who deserves encouragement.

Mr. and Mrs. W. B. Warren are still here. Mrs. Warren is one of the best and most loved boarding-house matrons to be found. This couple would make good in the best of mill hotels. Mr. Warren is an expert in spooling, warping and winding.

Miss Floyde Davidson, daughter of the master mechanic, is a new addition to the office force.

Superintendent L. C. Finley is justly proud of the many improvements made and under way, inside the mill, and is to be congratulated on the splendid running work, made possible by his able overseers and second hands.

R. H. Higgins is general overseer carding and spinning, assisted by J. O. Cofield; Iowa Grady, carder; M. I. Treece, spinner; M. W. Faison and R. E. Bennett, card grinders; J. G. Meacham, H. T. Varner, L. J. Lassiter, R. L. Harris, W. B. Pearce and B. H. Barbour are other key men in spinning room.

L. A. Denton, winding and warping; J. M. McGann, section; Ralph McGinn, section man on Abbott winders; Nat Winters, warp man; G. W. Leonard, drawing; Walter B. Dodd, slashers; J. L. Rosser, slasher foreman.

E. E. Finley is the genial overseer weaving; C. S. Howard, F. M. Sides and W. V. Moore are second hands. Now please note the fine group of loom fixers: M. H. Sides, H. B. Meacham, J. D. Ammons, H. C. Casper, W. J. Davis, Troy Liner, F. W. Mingia, A. S. Davis, J. F. Konegay, and E. F. Thomas, head loom fixer. J. B. Strickland, sample man, and Howard Stroud, timekeeper. G. C. McDaniel doesn't expect to haul filling always, and has asked the superintendent how to go about working up. Needless to say he will get every encouragement if he shows a willingness and ambition to learn. That is the kind of boy whom mill officials are looking for and are eager to help.

J. W. McGinnis and E. B. Covington, overseers cloth room; E. T. Davidson, master mechanic; P. N. Hughes, dyer; L. G. Strickland, assistant; W. M. Richardson, in charge of shipping; Douglas Small, supply clerk.

Found Secretary and Manager C. S. Tatum in the office for a wonder. He is always hard to catch, for he is an extremely busy man. S. G. Riley, assistant manager, is a young man of pleasing personality, and with two such tireless workers at the helm why shouldn't Pilot Mills make a safe voyage to Success Harbor.

DALLAS, TEX.

Attention Superintendents

We are pleased to have a nice news letter from the superintendent of Dallas Cotton Mills Co., Dallas, Tex., which will be read with interest by many of his friends all over the South. I'll never forget the royal welcome I received at this mill on my first and only trip through Texas a few years ago. In fact, everywhere in that big Western State, my son and I were made to feel that we "belonged."

We would be glad to have other superintendents or overseers send in their community news of general interest. If they don't have time, why not appoint some one to send in short write-ups for Aunt Becky's department? —AUNT BECKY.

The Fellowship Club of the Dallas Cotton Mills Co.

The Fellowship Club of the Dallas Cotton Mills Co. was organized February, 1935, with 20 charter members, selected from among the men holding supervisory positions, from office staff to second hands. Officers were elected to serve for one year, and thus the club was organized and operated for four years.

In 1939 it was considered advisable to reorganize the club and we now have over 40 members, loyal and faithful in attending our monthly meetings. Members pay small dues each month, the money being used for refreshments at meetings and for a summer outing for the entire club, with an annual banquet at the end of the year, at which time new members are initiated and new officers elected.

In case of illness of club members, flowers are sent, visits made and other courtesies shown by the club. In case of fire or death, donations are made to any of the mill workers.

We have a saving plan for club members, which enables them to have a nice sum for Christmas.

We occasionally invite distinguished speakers to meet with us. Recently Mr. Willis, a well known Dallasite, gave a talk on world conditions, as compared to prophecies and the Scriptures. Mr. Ryan, another fine Dallasite, delighted us with movies made in interesting parts of Colorado, Wyoming, Montana, Oregon, Washington, California, Arizona and Texas. The scenes being in colors, made it all even more interesting.

Pictures were made of the speakers by our mill photographer, which will go into a scrap book, along with other pictures of club outings.

We have started a building fund toward the erection of a new club house, to be erected on some lake shore where there is good fishing. In fact, this club is near and dear to the hearts of all of us, and we hope to do a lot of good through this association.

Otis Williams, Supt.,
Dallas Cotton Mills Co.

HENDERSON, N. C.

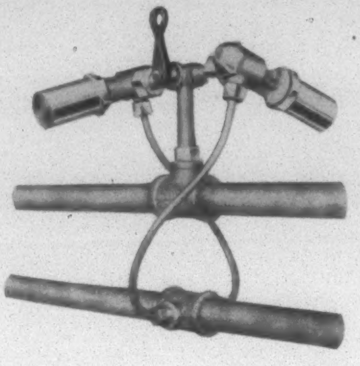
North Henderson Cotton Mills

I had been looking forward to calling on our good friend Superintendent J. C. Farmer, and to say I enjoyed every minute of my stop there is putting it mildly.

I don't believe there is another mill anywhere more up-to-date than this. In the opening room, there's a long draft system that makes one feel creepy. Just think of a machine that takes the cotton, properly weighs and mixes it automatically, and turns out a product that does away with drawing, intermediates and speeders. Anyway, that's what it looked like to me, and I didn't see a card room at all.

The mill is delightfully clean and the people look happy and prosperous. Most of the girls wear uniforms, and they are fresh and dainty, with hair nicely arranged. What a picture they would make compared to girls of twenty-five years ago, who thought that just any old thing was good enough to work in. Modern machinery, the elimination of dust and lint, have revolutionized the

(*Continued on Page 42*)



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Visiting the Mills

(*Continued from Page 39*)

textile industry, and then short hours, all have combined to make the mill worker healthy, happy and thankful for the heritage of work.

J. W. Brown is overseer spinning, with W. H. Clopton, Walter Beasley and E. F. Brummett, second hands.

J. K. Nowell is overseer winding, with Geo. H. Boone, Jesse H. Hayes and Jimmie Vaughn, second hands in winding, and Norman Pearce, second hand in packing.

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WARRENTON, N. C.

Peck Mfg. Co.

Peck Mfg. Co. is repairing and repainting the village houses.

J. W. Liles is superintendent; L. J. Faulkner, carder; W. H. Husky, spinner on first shift; J. H. Harp, carder; W. E. Lloyd, spinner, second shift; H. C. Fleming, master mechanic.

Cotton Spinning for June Shows Increase Over 1939

Washington, D. C.—The Census Bureau reported that the cotton spinning industry operated during June at 87.1 per cent of capacity, on a two-shift, 80-hour-week basis, compared with 89.4 per cent during May this year, and 82.2 per cent during June last year.

Spinning spindles in place June 30th totaled 24,752,022, of which 21,942,708 were active at some time during the month, compared with 24,805,780 and 22,217,302 for May this year, and 25,546,376 and 21,788,286 for June last year.

Active spindle hours for June totaled 6,900,401,928, or an average of 279 hours per spindle in place, compared with 8,039,565,765 and 324 for May this year, and 7,395,169,097 and 289 for June last year.

Spinning spindles in place included: In cotton-growing States, 18,141,970, of which 16,826,186 were active, compared with 18,156,714 and 17,006,196 for May this year, and 18,429,010 and 16,380,852 for June last year; and in New England States, 5,881,912, of which 4,512,164 were active, compared with 5,898,158 and 4,614,186 and 6,318,928 and 4,777,374.

Active spindle hours included: In cotton-growing States, 5,555,662,989, or an average of 306 hours per spindle in place, compared with 6,515,002,053 and 359 for May this year, and 5,797,747,039 and 315 for June last year; and in New England States, 1,197,717,084 or 204 per spindle, compared with 1,369,818,931 and 232, and 1,448,957,210 and 229.

Active spindle hours and the average per spindle in place for June by States follow:

Alabama, 539,174,273 and 300; Georgia, 986,624,241 and 308; Mississippi, 29,538,528 and 196; North Carolina, 1,629,607,461 and 279; South Carolina, 1,939,076,584 and 351; Tennessee, 206,819,304 and 373; Texas, 63,999,054 and 273; Virginia, 125,395,924 and 196.

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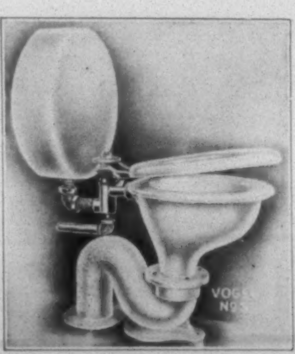

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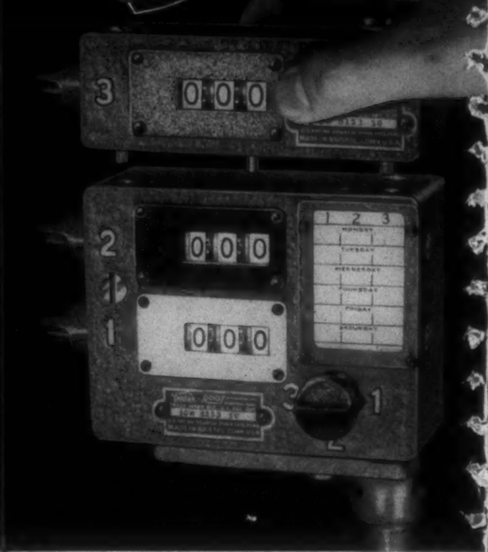

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